



MINISTRY OF SCIENCE AND HIGHER EDUCATION AND OF THE RUSSIAN  
FEDERATION

Federal state autonomous educational institution of higher education

«Far Eastern Federal University»

(FEFU)

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**SCHOOL OF MEDICINE**

«AGREED»

Head of education program

«General medicine»

Usov V.V.



«APPROVED»

Director of the Department of  
Clinical Medicine

Goncharuk R.A.

« 06 » December 2022

« 06 » December 2022

**WORK PROGRAM OF THE DISCIPLINE (WP)**

«Military Surgery»

Educational program

Specialty 31.05.01 General Medicine

Form of training: full-time

course 5 (semester 10)  
lectures 8 hours  
practical classes 28 hours  
lab work hours  
total classroom hours 36 hours.  
independent work 36 hours  
abstract works ()  
test papers ()  
semester credit -10

The work program of the discipline "Military Field Surgery" was compiled in accordance with the requirements of the Federal State Educational Standard of Higher Education in the specialty 31.05.01 General Medicine, approved by order of the Ministry of Science and Higher Education of the Russian Federation of the Russian Federation dated 09.02.2016 No. 95.

The work program was discussed at a meeting of the Department of Clinical Medicine. Minutes dated December 06, 2022 No. 4.

Director of the Department of Clinical Medicine Brodskaya T.A.

Compiled by: Doctor of Medical Sciences, Professor Usov V.V., Senior Lecturer Struzhkina N.I.

1. Рабочая программа пересмотрена на заседании Департамента/кафедры/отделения (реализующего дисциплину) и утверждена на заседании Департамента/кафедры/отделения (выпускающего структурного подразделения), протокол от «\_\_\_» \_\_\_\_\_ 202\_\_ г. №

2. Рабочая программа пересмотрена на заседании Департамента/кафедры/отделения (реализующего дисциплину) и утверждена на заседании Департамента/кафедры/отделения (выпускающего структурного подразделения), протокол от «\_» \_\_\_\_\_ 202\_\_ г. №

3. Рабочая программа пересмотрена на заседании Департамента/кафедры/отделения (реализующего дисциплину) и утверждена на заседании Департамента/кафедры/отделения (выпускающего структурного подразделения), протокол от «\_» \_\_\_\_\_ 202\_\_ г. №

4. Рабочая программа пересмотрена на заседании Департамента/кафедры/отделения (реализующего дисциплину) и утверждена на заседании Департамента/кафедры/отделения (выпускающего структурного подразделения), протокол от «\_» \_\_\_\_\_ 202\_\_ г. №

5. Рабочая программа пересмотрена на заседании Департамента/кафедры/отделения (реализующего дисциплину) и утверждена на заседании Департамента/кафедры/отделения (выпускающего структурного подразделения), протокол от «\_» \_\_\_\_\_ 202\_\_ г. №

## **ANNOTATION**

The discipline "Military Surgery" is intended for students enrolled in the educational program 31.05.01 "General Medicine".

The total labor intensity of the discipline is 72 hours, 2 credits.

"Military field surgery" is a basic discipline, implemented in the 5th year and ends with a test.

The curriculum provides for lectures in the amount of 8 hours, practical classes - 28 hours, and hours for independent work - 36 hours. Online course not provided.

The language of the program implementation is English.

### **I. GOALS AND OBJECTIVES OF THE DISCIPLINE.**

#### **Course objective:**

Formation of students' knowledge of military field surgery, the general principles of organizing the provision of surgical care to the wounded in wartime conditions at the stages of medical evacuation; diagnostic methods, goals and types of sorting of victims of mass lesions; methods and types of medical care for victims at the stages of medical evacuation; clinic, diagnosis and treatment of modern gunshot wounds, combined and thermal injuries, closed injuries, wound infection, traumatic shock, toxicosis and massive blood loss.

#### **Tasks:**

1. Studying the basics of organizing surgical care at the stages of medical evacuation.
2. Studying the volume of assistance at the stages of medical evacuation.
3. The study of methods for diagnosing wartime damage.
4. The study of methods and types of medical sorting of the wounded.
5. The study of techniques and methods of providing medical care to victims in the scope of first aid in emergency situations.

Competences of students, indicators of their achievement and learning outcomes in the discipline "Military Surgery".

GPC-7 readiness to use the basic physical, chemical, mathematical and other natural science concepts and methods in solving professional problems	Knows	the mechanism of the damaging effect and the pathogenesis of pathological changes in the body under the influence of mechanical physical, chemical, radiation combat damaging factors.
	Able	to identify the impact of combat damaging factors and determine the nature of the damage.
	Possesses	the ability to assess the severity of the defeat depending on the type of damaging combat effect
GPC-10 readiness to ensure the organization of patient care and the provision of primary pre-medical health care	Knows	fundamentals of the organization of patient care and the provision of primary pre-medical health care in combat conditions at the stages of medical evacuation
	Able	organize patient care and provide primary pre-medical health care in combat conditions at the stages of medical evacuation
	Possesses	the skills to organize patient care and provide primary pre-medical health care in combat conditions at the stages of medical evacuation
PC-6 the ability to determine in patients the main pathological conditions, symptoms, disease syndromes, nosological forms in accordance with the International Statistical Classification of Diseases and Related Health Problems, X revision	Knows	the main pathological conditions, symptoms, syndromes associated with combat mechanical, physical, chemical and radiation injury.
	Able	to identify the main pathological conditions, symptoms, syndromes associated with combat mechanical, physical, chemical and radiation injury.
	Possesses	the skill of determining pathological conditions, symptoms, syndromes associated with combat mechanical, physical, chemical and radiation injuries.
PC-19 ability to organize medical care in emergency situations, including medical evacuation	Knows	features of the organization of medical care and medical evacuation in combat conditions
	Able	to plan for triage, medical care and medical evacuation in combat situations
	Possesses	skills to perform triage, provide medical care and organize medical evacuation in combat conditions

## II. LABOR INTENSITY OF THE DISCIPLINE AND TYPES OF LESSONS IN THE DISCIPLINE

The total labor intensity of the discipline is 2 credit units (72 academic hours).  
(1 credit unit corresponds to 36 academic hours).

The types of training sessions and work of the student in the discipline can be:

Name	Types of training sessions and work of the student
Lec	Lectures
Lab	Laboratory works
PL	Practical lessons
OC	Online course (not provided)
IW	Independent work of the student during the period of theoretical training
Control	Independent work of the student and contact work of the student with the teacher during the period of intermediate certification

### III. ACADEMIC SUBJECT STRUCTURE:

Full-time form of education.

№	Section name disciplines	Semester	The number of hours by type of training sessions and work of the student						Forms of intermediate certification, current monitoring of progress	
			Lec	Lab	PL	OC	IW	Control		
1	Module 1. General military surgery	9	8					9		YO-1 YO-2 YO-3 IP-2
2	Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries"	9			14			9		YO-1 YO-2 YO-3 IP-1 IP-2
3	Module 3. Injuries to the limbs, skull, spine	9			8			9		YO-1 YO-2 YO-3 IP-1 IP-2

4	Module 4. Combat combined defeats	9			4		9		YO-1 YO-2 YO-3 IP-1 IP-2
11	Test lesson				2		6		credit
12	Total:		8		28		36		
	Total								72 hours

#### **IV. STRUCTURE AND CONTENT OF THE THEORETICAL PART OF THE COURSE (8 HOURS)**

##### **Module 1. General military field surgery (8 hours).**

**Topic 1 Fundamentals of organizing the provision of surgical care in emergency situations. The doctrine of the gunshot wound. Surgical treatment of gunshot wounds (2 hours). Problem lecture (MAO).**

The concept of the discipline of military field (VPH) and naval surgery (VMH). Stages of development of military field surgery. Features of VPH and VMX. General principles of organizing the provision of surgical care to the wounded in wartime conditions. Medical sorting and evacuation of the wounded. Organization of care and surgical treatment at the stages of evacuation. Tasks and scope of assistance at the stages of medical evacuation. General characteristics and classification of soft tissue wounds. Classification of gunshot wounds. Ballistic and pathomorphological characteristics of gunshot wounds. Pathogenesis of gunshot wounds. Characteristics of the gunshot wound zones. Clinical signs of wounds. General principles of treatment of gunshot wounds. Treatment of wounds at the stages of medical evacuation.

**Topic 2 Transport immobilization. Bleeding and acute blood loss. Methods and means of anesthesia for the wounded at the stages of medical evacuation (2 hours). Problem lecture (MAO).**

Indications for the imposition of transport immobilization. Types of transport immobilization. Classification of bleeding and blood loss. Clinic and diagnosis of bleeding and blood loss. Pathogenesis and severity of blood loss. Ways of temporary

and final stop of bleeding at the pre-hospital stages. Bleeding outcomes. Treatment of bleeding and blood loss during the stages of evacuation. Types and stages of local anesthesia. Means and methods of anesthesia at the stages of various levels of medical care.

**Topic 3 Traumatic shock and traumatic disease in the wounded. Syndrome of prolonged compression (2 hours). Problem lecture (MAO).**

Etiology and pathogenesis of traumatic shock and long-term compression syndrome (SDS). The frequency of traumatic shock and SDS in open and closed wartime injuries. Classification and clinic, complications and outcomes of traumatic shock and SDS. Treatment of traumatic shock and SDS at the stages of medical evacuation.

**Topic 4 Combined radiation and chemical damage. Infectious complications of wounds (2 hours)**

Classification of combined lesions. Combined radiation, chemical, thermomechanical lesions. Causes and pathogenesis of combined lesions. Factors contributing to the occurrence of infectious complications in the wounded. Classification of infectious complications of gunshot wounds. Purulent (anaerobic) infections of wounds. Generalized complications of wounds - sepsis. Anaerobic infections of gunshot wounds. Tetanus in the wounded.

**V. STRUCTURE AND CONTENT OF THE PRACTICAL PART OF THE COURSE (28 HOURS)**

**Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" (14 hours)**

**Topic 1. Organization of surgical care in emergency situations (2 hours).**

Medical sorting and evacuation of the wounded. Organization of care and surgical treatment at the stages of evacuation. Tasks and scope of assistance at the stages of medical evacuation. Medical records, form 100.

**Topic 2. The doctrine of a gunshot wound. Surgical treatment of gunshot wounds (2 hours)** Types of firearms and other types of weapons, characteristics of

their damaging effect. Wound ballistics and morphofunctional changes in tissues in gunshot wounds. Principles of treatment of gunshot wounds.

**Topic 3. Wounds and closed injuries of the chest (4 hours).** Clinical signs of acute respiratory failure. X-ray signs of pneumothorax and hemothorax. Closed and open rib fractures. Criteria for acute heart failure, cardiogenic shock.

Topic 4. Wounds and closed injuries of the abdomen (4 hours). Classification of wounds and injuries of the abdomen. Clinical picture and diagnosis of gunshot wounds of the abdomen. Clinical picture and diagnosis of closed abdominal injuries. General principles of surgical treatment for wounds and injuries of the abdomen. The volume of medical care at the stages of medical evacuation for wounds and injuries of the abdomen.

**Topic 5. Combat injury of the pelvis and genitourinary organs (2 hours).** Frequency and classification of wounds and closed injuries of the pelvis. Symptoms and diagnosis of pelvic fractures with and without damage to the pelvic organs. Terms of temporary non-transportability of the wounded. Evacuation by appointment for pelvic injuries. Methods and methods of diversion of urine.

### **Module 3. Injuries of limbs, skull, spine (8 hours)**

**Topic 1. Wounds and closed injuries of the limbs (4 hours).** The concept of combat trauma of the musculoskeletal system. Causes, types, classification of combat injuries of the limbs. The concept of gunshot fracture. Clinical manifestations of gunshot injuries of the extremities. Diagnosis of a combat injury of the musculoskeletal system. Criteria for diagnosing a gunshot fracture. Amounts of assistance at the stages of medical evacuation to victims with injuries of the musculoskeletal system. Damage to the neurovascular limbs: types, diagnosis, scope of care at the stages of medical evacuation.

**Topic 2. Wounds and closed injuries of the skull, brain, spine and spinal cord (4 hours).** Definition of the concept of "combat damage to the nervous system": gunshot wounds, explosive injuries, injuries. Combat injuries of the skull and brain. Penetrating and non-penetrating wounds of the skull and brain. The volume of assistance to victims with combat craniocerebral injuries at the stages of medical



evacuation. General principles of primary surgical treatment of skull and brain wounds. Clinical forms of closed injuries of the spine and spinal cord. Gunshot wounds of the spine and spinal cord. The volume of assistance at the stages of medical evacuation to victims with combat injuries of the spine and spinal cord. General principles of primary surgical treatment of injuries of the spine and spinal cord.

**Module 4. Combat combined defeats (4 hours)**

**Topic 1. Combined radiation and chemical damage (2 hours).** The energy of an atomic explosion, its types and damaging factors. Clinical course of combined radiation injuries. Medical assistance at the stage of evacuation and in the hospital. Phosphorus-organic toxic substances and their effect on the body of the victim. Poisonous substances of skin-resorptive action. The volume of assistance at the stages of medical evacuation in case of combined chemical lesions.

**Topic 2. Thermal injury and cold injury (2 hours).** Classification of thermal lesions and frostbite. Diagnosis of the depth and area of burns. Definitions of the concept of "burn disease" and "burn shock". Respiratory burn. Electrical injury. Cold injury: diagnosis, clinical course, treatment at the stages of medical evacuation.

**Final lesson (test control, solution of situational problems) (2 hours).** Solving problem situations and diagnostic tasks (MAO).

**VI. CONTROL OF ACHIEVEMENT OF COURSE OBJECTIVES**

Code and wording of competence	Stages of competence formation			
Controlled sections/topics of disciplines	Codes and stages of formation of competencies	Evaluation tools		
		Current control	Intermediate assessment/exam	
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine	GPC-7 readiness to use the basic physical, chemical, mathematical and other natural science concepts and methods in solving	Knows	US-1 Interview	Questions to credit
		Can	PW-1 Tectr	PW-1 Tectr
		Possesses	US-3 Report	US-2

Module 4. Combat combined defeats	professional problems			
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	GPC-10 readiness to ensure the organization of patient care and the provision of primary pre-medical health care	Knows	US-1 Interview	Questions to credit
		Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	PC-6 the ability to determine in patients the main pathological conditions, symptoms, disease syndromes, nosological forms in accordance with the International Statistical Classification of Diseases and Related Health Problems, X revision	Knows	US-1 Interview	Questions to credit
		Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	PC-19 ability to organize medical care in emergency situations, including medical evacuation	Knows	US-1 Interview	Questions to credit
		Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Credit	GPC-7 GPC-10 PC-6 PC-19			Questions for credit

## VII. EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' INDEPENDENT WORK

Independent is both individual and collective learning activities carried out without the direct guidance of the teacher, but according to his instructions and under his control. Independent work is a cognitive learning activity, when the sequence of a student's thinking, his mental and practical operations and actions depends and is determined by the student himself.

Independent work of students contributes to the development of independence, responsibility and organization, a creative approach to solving problems at the educational and professional levels, which ultimately leads to the development of the skill of independent planning and implementation of activities.

The purpose of independent work of students is to master the necessary competencies in their field of study, experience in creative and research activities.

Forms of independent work of students:

- work with basic and additional literature, Internet resources;
- self-acquaintance with the lecture material presented on electronic media in the library of an educational institution;
- preparation of abstract reviews of sources of periodicals, reference notes, predetermined by the teacher;
- search for information on the topic with its subsequent presentation to the audience in the form of a report, presentations;
- preparation for the implementation of classroom control work;
- performance of home control works;
- performance of test tasks, problem solving;
- preparation of reports for presentation at a seminar, conference;
- filling out a workbook;
- writing an essay, term paper;
- preparation for business and role-playing games;
- drawing up a resume;
- preparation for tests and exams;
- other activities organized and carried out by the educational institution and student self-government bodies.

The WPD presents the main content of the topics, evaluation tools: terms and concepts necessary for mastering the discipline.

During the assimilation of the course "Military field surgery" the student will have to do a large amount of independent work, which includes preparation for seminars.

Practical classes help students to better understand the educational material, to acquire the skills of creative work on documents and primary sources.

Plans for practical classes, their topics, recommended literature, the purpose and objectives of its study are reported by the teacher at introductory classes or in the curriculum for this discipline.

Before proceeding to the study of the topic, it is necessary to familiarize yourself with the main questions of the practical lesson plan and the list of recommended literature. Starting preparation for a practical lesson, it is necessary, first of all, to refer to the lecture notes, sections of textbooks and teaching aids in order to get a general idea of the place and significance of the topic in the course being studied. Then work with additional literature, make notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the construction of the topic under study, highlight the main provisions, trace their logic and thereby delve into the essence of the problem under study.

It is necessary to keep records of the studied material in the form of a summary, which, along with visual, includes motor memory and allows you to accumulate an individual fund of auxiliary materials for quickly repeating what you have read, for mobilizing accumulated knowledge. The main forms of recording: plan (simple and detailed), extracts, abstracts.

In the process of preparation, it is important to compare sources, think over the material being studied and build an algorithm of actions, carefully consider your oral presentation.

At a practical lesson, each participant should be ready to discuss all the issues raised in the plan, be as active as possible when considering them. The speech must

be convincing and reasoned, and simple reading of the abstract is not allowed. It is important to show your own attitude to what is being said, to express your personal opinion, understanding, justify it and draw the right conclusions from what has been said. At the same time, one can refer to notes of abstracts and lectures, directly to primary sources, use knowledge of monographs and publications, facts and observations of modern life, etc.

A student who did not have time to speak at a practical lesson can present the prepared summary to the teacher for verification and, if necessary, answer the teacher's questions on the topic of the practical lesson in order to receive a credit mark on this topic.

Educational and methodological support of independent work of students in the discipline "Military field surgery" includes:

- characteristics of tasks for independent work of students and methodological recommendations for their implementation;
- requirements for the presentation and presentation of the results of independent work;
- criteria for evaluating the performance of independent work.

#### Guidelines for preparing presentations

To prepare a presentation, it is recommended to use: PowerPoint, MS Word, Acrobat Reader, LaTeX beamer package. The simplest presentation program is Microsoft PowerPoint. To prepare the presentation, it is necessary to process the information collected when writing the abstract.

The sequence of preparation of the presentation:

1. Clearly state the purpose of the presentation.
2. Determine what will be the format of the presentation: live performance (then how long will it be) or email (what will be the context of the presentation).
3. Select all the content for the presentation and build a logical chain of presentation.
4. Identify key points in the content of the text and highlight them.

5. Determine the types of visualization (pictures) to display them on slides in accordance with the logic, purpose and specifics of the material.
6. Choose the design and format the slides (the number of pictures and text, their location, color and size).
7. Check the visual perception of the presentation.

Visualization types include illustrations, images, diagrams, tables. An illustration is a representation of a real-life visual range. Images, unlike illustrations, are metaphors. Their purpose is to evoke emotion and create an attitude towards it, to influence the audience. With the help of well-thought-out and presented images, information can remain in a person's memory for a long time. Diagram - visualization of quantitative and qualitative relationships. They are used to convincingly demonstrate data, for spatial reasoning in addition to logical reasoning. A table is a concrete, visual and accurate display of data. Its main purpose is to structure information, which sometimes makes it easier for the audience to perceive the data.

#### Practical Tips for Preparing a Presentation

- printed text + slides + handouts are prepared separately;
- slides - visual presentation of information, which should contain a minimum of text, a maximum of images that carry a semantic load, look clear and simple;
- textual content of the presentation - oral speech or reading, which should include arguments, facts, evidence and emotions;
- recommended number of slides 17-22;
- obligatory information for the presentation: topic, surname and initials of the speaker; message plan; brief conclusions from what has been said; list of sources used;
- handouts – should provide the same depth and scope as a live performance: people trust what they can carry with them more than disappearing images, words and slides are forgotten, and handouts remain a constant tangible reminder; it is important to hand out

handouts at the end of the presentation; handouts should be different from slides, should be more informative.

## **VIII. LIST OF EDUCATIONAL LITERATURE AND INFORMATION AND METHODOLOGICAL SUPPORT OF THE DISCIPLINE**

### **Main literature**

1. Military field surgery: textbook, ed. Gumanenko E. K. - Moscow: GEOTAR-Media, 2022. - 786 p. – ISBN 978-5-9704-7093-0. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970470930.html>

2. Garkavi, A. V. Medicine of emergency situations: textbook / Garkavi A. V., Kavalersky G. M. [and others]. - Moscow: GEOTAR-Media, 2018. - 352 p. - ISBN 978-5-9704-4719-2. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970447192.html>

3. Kolesnichenko, P. L. Disaster Medicine: textbook / P. L. Kolesnichenko [and others]. - Moscow: GEOTAR-Media, 2019. - 448 p. : ill. - 448 p. - ISBN 978-5-9704-5264-6. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970452646.html>

4. Levchuk, I. P. Disaster Medicine: textbook / Levchuk I. P., Tretyakov N. V. - Moscow: GEOTAR-Media, 2021. - 288 p. - ISBN 978-5-9704-6014-6. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970460146.html>

### **additional literature**

1. Gumanenko, E.K. Military field surgery of local wars and armed conflicts: a guide / Ed. E. K. Gumanenko, I. M. Samokhvalova - Moscow: GEOTAR-Media, 2011. - 672 p. - ISBN 978-5-9704-1901-4. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970419014.html>

2. Lysenko, M. V. Military field surgery: hands. to pract. occupations / Ed. M. V. Lysenko - Moscow: GEOTAR-Media, 2010. - 576 p. - ISBN 978-5-9704-1311-1. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9785970413111.html>

3. Korik, V. E. Military field surgery: textbook / V. E. Korik, S. A. Zhidkov, V. G. Bogdan, S. A. Alekseev, N. Yu. Blakhov, T. E. Ivanova, D. A. Klyuiko, Yu. V. Kuzmin, A. L. Popchenko, A. P. Trukhan, S. N. Shnitko - Minsk: Vyssh. school, 2017. - 350 p. - ISBN 978-985-06-2757-5. - Text: electronic // EBS "Student Consultant": [website]. - URL: <https://www.studentlibrary.ru/book/ISBN9789850627575.html>

### **Electronic resources**

1. Russian society surgeon ov / <http://xn----9sdbdejx7bdduahou3a5d.xn--p1ai/>
2. School of modern surgery / <http://www.websurg.ru/>
3. Main surgical portal / <http://www.operabelno.ru/>
4. Surgeon Medical surgical portal / <http://xupypr.org/>
5. WebSurg / <http://www.websurg.com/?lng=ru>
6. MED-EDU.ru - Medical portal / <http://www.medvideo.org/surgery/>

## **IX. METHODOLOGICAL INSTRUCTIONS FOR MASTERING THE DISCIPLINE**

Successful mastering of the discipline involves the active work of students in all classes of the classroom form: lectures and practices, the implementation of certification activities. In the process of studying the discipline, the student needs to focus on the study of lecture material, preparation for practical classes, the performance of control and creative work.

The purpose of conducting practical classes is to consolidate the knowledge gained by students in lectures, to model practical situations, and to test the effectiveness of students' independent work.



A practical lesson usually includes an oral questioning of students on the issues of seminars. At the same time, the degree of students' knowledge of the material of the lecture course, basic textbooks, knowledge of current problems and the current situation in the modern educational space is revealed. Further, the ability of students to apply the received theoretical knowledge to the solution of a practical or problem is revealed.

It is advisable to start preparing for a practical lesson with a repetition of the lecture material. At the same time, it should be taken into account that the lecture course is limited in time and does not allow the lecturer to consider in detail all aspects of the issue under study. Therefore, it is required to independently expand knowledge of both theoretical and practical nature. At the same time, lectures provide a good guide for the student to search for additional materials, as they set a certain structure and logic for studying a particular issue.

In the course of independent work, the student first of all needs to study the material presented in the educational literature and monographs recommended by the department and / or teacher. Students should pay attention to the fact that the library list includes not only basic textbooks, but also more in-depth sources on each topic of the course. Consistent study of the subject allows the intern to form a stable theoretical base.

An important part of preparing for a practical lesson is the work of students with scientific and analytical articles that are published in specialized periodicals. They allow you to expand your horizons and get an idea of current problems, possible ways to solve them and / or trends in the area under study.

As a final step in preparing for a practical session, the student should be encouraged to familiarize himself with the results of scientific research corresponding to each topic.

Mastering the discipline "Military Field Surgery" involves a rating system for assessing the knowledge of students and provides for the teacher's current control over attendance by students of lectures, preparation and performance of all practical tasks, performance of all types of independent work.

An intermediate certification in the discipline "Military surgery" is a test.

A student is considered certified in the discipline, provided that all types of current control and independent work provided for by the curriculum are performed.

The scale for assessing the formation of educational results in the discipline is presented in the fund of evaluation tools (FET).

## X. LOGISTICS OF THE DISCIPLINE

For practical work, as well as for organizing independent work, students have access to the following laboratory equipment and specialized rooms that comply with current sanitary and fire safety standards, as well as safety requirements for educational and scientific production work.

The list of logistical and software support of the discipline is given in the tables.

### Logistics of discipline

Name of special rooms and rooms for independent work	List of main equipment
Computer class of the School of Biomedicine aud. M723, 15 jobs	Motorized Screen 236*147cm Trim Screen Line; Projector DLP, 3000 ANSI Lm, WXGA 1280x800, 2000:1 EW330U Mitsubishi; Subsystem of specialized equipment fastenings CORSA-2007 Tuarex; Video switching subsystem: DVI DXP 44 DVI Pro Extron matrix switcher; DVI over twisted pair cable DVI 201 Tx/Rx Extron; Subsystem of audio switching and sound amplification; acoustic system for ceiling mounting SI 3CT LP Extron; Extron DMP 44 LC digital audio processor; extension for IPL T CR48 control controller; wireless LANs for students are provided with a system based on 802.11a/b/g/n 2x2 MIMO(2SS) access points. HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, W, usb kbd/ mse, Win7Pro(64-bit)+Win8.1Pro(64-bit), 1-1-1 Wty
690922, Primorsky Territory, Vladivostok, Russian Island, Saperny Peninsula, Ayaks settlement, 10,	Multimedia Audience: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Mortise interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Sennheiser EW 122 G3 UHF lavalier radio system as part of a wireless microphone and receiver; LifeSizeExpress 220-Codeonly-Non-AES video conferencing codec; Network video camera Multipix

	MP-HD718; Two LCD panels 47", Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterruptible power supply
690922 Primorsky Territory, Vladivostok, Russian Island, Saperny Peninsula, Ayaks village, 10, Reading rooms of the FEFU Scientific Library with open access to the fund (building A - level 10)	HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, BT, usb kbd/ mse, Win7Pro (64-bit)+Win8.1Pro(64-bit), 1-1-1 Wty Internet access speed 500 Mbps. Workplaces for people with disabilities are equipped with Braille displays and printers; equipped with: portable devices for reading flat-print texts, scanning and reading machines, a video enlarger with the ability to regulate color spectra; magnifying electronic loupes and ultrasonic markers
690922 Primorsky Territory, Vladivostok, Russian Island, Saperny Peninsula, Ayaks village, 10, room. M 516	Topographic anatomy and operative surgery class Large surgical set (1 pc.) Package for disposal class. B (yellow) with a coupler, 50*60 cm Needles BT 204/3 DS 70(130) Disposable dressing gown (sleeve: on a knitted cuff) Disposable gloves, non-sterile (size M) Disposable gloves, non-sterile (size S) Disposable gloves, non-sterile (size L) Pointed scissors (2 pcs.) Spatula neurosurgical 2-sided small (2 pcs.) Suture material Lavsan braided M 3.5 (0) coil 10 meters, production Russia Lavsan braided white M 3 (2/0) 200 meters cassette, made in Russia Functional model of the knee joint of the luxury class (1 pc.) Model of the knee joint, 12 parts (1 pc.) Abdominal Posters (Plastic) – Laminated Chest Posters (Plastic) - Laminated Fake hernia (1 pc.) Fake brush (collapsible) (1 pc.) Intubation laryngoscope (1 pc.)

### List of information technologies and software

The location of the computer equipment on which the software is installed, the number of jobs	Перечень программного обеспечения
Computer class of the School of Biomedicine aud. M723, 15 jobs	Windows Seven Enterprise SP3x64 Operating system Microsoft Office Professional Plus 2010 An office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.); 7Zip 9.20 - free file archiver with a high degree of data compression; ABBYY FineReader 11 - software for optical character recognition;

	Adobe Acrobat XI Pro 11.0.00 - a software package for creating and viewing electronic publications in PDF format; WinDjView 2.0.2 is a program for recognizing and viewing files with the same name format DJV and DjVu.
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In order to provide special conditions for the education of people with disabilities and people with disabilities in FEFU, all buildings are equipped with ramps, elevators, lifts, specialized places equipped with toilets, information and navigation support signs.

MINISTRY OF SCIENCE AND HIGHER EDUCATION AND OF THE RUSSIAN  
FEDERATION  
Federal state autonomous educational institution of higher education  
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**SCHOOL OF MEDICINE**

**FUND OF EVALUATION TOOLS**

discipline "Military surgery"  
specialist's educational program  
31.05.01 General medicine  
Full-time training form

Vladivostok

2021

the list of assessment forms used at various stages of the formation of competencies  
in the course of mastering the discipline "Military Field Surgery"

Code and wording of competence	Stages of competence formation			
Controlled sections/topics of disciplines	Codes and stages of formation of competencies		Evaluation tools	
			Current control	Intermediate assessment/exam
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	GPC-7 readiness to use the basic physical, chemical, mathematical and other natural science concepts and methods in solving professional problems	Knows	US-1 Interview	Questions to credit
		Can	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	GPC-10 readiness to ensure the organization of patient care and the provision of primary pre-medical health care	Knows	US-1 Interview	Questions to credit
		Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Module 1. General military surgery Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	PC-6 the ability to determine in patients the main pathological conditions, symptoms, disease syndromes, nosological forms in accordance with the International Statistical Classification of Diseases and Related Health Problems, X revision	Knows	US-1 Interview	Questions to credit
		Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Module 1. General military surgery	PC-19	Knows	US-1 Interview	Questions to credit

Module 2. "Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries" Module 3. Injuries to the limbs, skull, spine Module 4. Combat combined defeats	ability to organize medical care in emergency situations, including medical evacuation	Able	PW-1 Tect	PW-1 Tect
		Possesses	US-3 Report	US-2
Credit	GPC-7 GPC-10 PC-6 PC-19			Questions for credit

Scale for assessing the level of achievement of learning outcomes for the current and intermediate certification in the discipline "Military Field Surgery"

Points (rating score)	Levels of achievement learning		Requirements for the formed competencies
	Current and Intermediate attestation	Intermediate certification	
100 – 86	Elevated	credit" / "excellent"	The student freely and confidently finds reliable sources of information, operates with the information provided, has excellent skills in analyzing and synthesizing information, knows all the main methods for solving problems provided for by the curriculum, knows typical mistakes and possible difficulties in solving a particular problem, and is able to choose and effectively apply appropriate method for solving a specific problem
85 – 76	Base	"credit" / "good"	In most cases, he is able to identify reliable sources of information, process, analyze and synthesize the proposed information, choose a method for solving a problem and solve it. Makes single serious mistakes in solving problems, experiences difficulties in rare or difficult cases of solving problems, does not know typical mistakes and possible difficulties in solving a particular problem
75 – 61	Threshold	""credit"" / "satisfactory"	Makes mistakes in determining the reliability of sources of information, is able to correctly solve only typical, most common problems in a particular area (process information, choose a method for solving a problem and solve it)

60 – 0	Level not reached	"not credit" / "unsatisfactory"	He does not know a significant part of the program material, makes significant mistakes, performs practical work uncertainly, with great difficulty.
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### **Current certification in the discipline (module) "Military field surgery"**

The current certification of students in the discipline "Military Field Surgery" is carried out in accordance with the local regulations of the Far Eastern Federal University and is mandatory.

The current attestation in the discipline is carried out in the form of control measures (interview (UO-1); colloquium (UO-2); report, message (UO-3); tests (PR-1); control work (PR-2) to assess the actual student learning outcomes and is carried out by the lead teacher.

For each object, a description of the assessment procedures is given in relation to the assessment tools used.

### **Evaluation tools for monitoring**

#### 1. Questions for the interview and colloquium

Module I Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries.

1. Medical sorting and evacuation of the wounded. Medical documentation.
2. Organization of care and surgical treatment at the stages of evacuation.
3. Amount of assistance to the wounded with chest injuries at the stages of medical evacuation.
4. Classification of closed injuries and open wounds of the chest.
5. Damage to the lungs, trachea and bronchi.
6. Damage and injury to the heart.
7. Damage to the esophagus.
8. Consequences of damage to the organs of the chest cavity.
9. Drainage of the pleural cavity in pneumothorax and hemothorax.
10. Thoracotomy for chest injuries.
11. Videothoracoscopy for chest trauma.



12. Treatment of injuries of the cervical and thoracic esophagus.
13. Classification of wounds and injuries of the abdomen.
14. Clinical picture and diagnosis of gunshot wounds of the abdomen.
15. Clinical picture and diagnosis of closed abdominal injuries.
16. Surgical treatment for wounds and injuries of the abdomen.
17. The volume of medical care at the stages of medical evacuation for wounds and injuries of the abdomen.
18. Classification of pelvic fractures, the concept of stable and unstable fractures.
19. Symptoms and diagnosis of pelvic fractures with and without damage to the pelvic ring.
20. Shock, blood loss and wound infection in gunshot injuries of the pelvis.
21. Injuries and wounds of the kidneys and ureters.
22. Damage to the bladder and urethra.
23. Damage to the scrotum and its organs.
24. Types of firearms and other types of conventional weapons, characteristics of their damaging effect. Features of modern wounds caused by firearms, their classification.
25. Wound ballistics and morphofunctional changes in tissues in gunshot wounds.
26. Primary and secondary microbial contamination of wounds, microflora and wound infection. Mechanisms of healing of gunshot wounds by primary and secondary intention.
27. Purposes and characteristics of PST and repeated surgical treatment for gunshot wounds. Indications and contraindications for surgical treatment of wounds.

## **Module II. Injuries to the limbs, skull, spine**

1. The role of transport immobilization in the prevention of traumatic shock, bleeding, secondary tissue damage and infectious complications of wounds at the stages of medical evacuation.

2. Indications for transport immobilization. Rules of transport immobilization. Typical mistakes in the implementation of transport immobilization.

3. Improvised and service means of transport immobilization. Application technique and choice of transport splints for various localizations of injuries of the upper and lower extremities, pelvis, and spine.

4. The reaction of the body to blood loss. Determination of the amount of blood loss.

5. Amount of assistance at the stages of medical evacuation in case of blood loss. Rules for applying a hemostatic tourniquet.

6. Assistance to the wounded with damage to the main vessels.

7. Treatment of acute blood loss.

8. Types of local anesthesia and the mechanism of action of local anesthetics.

9. Characteristics of the action of local anesthetics, complications of local anesthesia.

10. Cervical vagosympathetic blockade according to A. V. Vishnevsky.

11. Intercostal and paravertebral blockade.

12. Anesthesia of the brachial plexus, femoral, sciatic nerves.

13. Case blockade of the shoulder, forearm, thigh, lower leg.

14. Pathogenesis of traumatic shock. Classification, clinical picture and diagnosis.

15. Erectile and torpid phases of shock. Types of terminal states.

16. Treatment of traumatic shock at the stages of medical evacuation and in the hospital.

17. Reasons for the development of the syndrome of prolonged compression and its pathogenesis.

18. Periodization of the syndrome of prolonged compression. Clinical manifestations. Classification of limb ischemia.

19. Approaches to the treatment of the syndrome of prolonged compression.

20. Assistance at the stages of medical evacuation of the wounded and victims with prolonged compression syndrome.

21. Causes, types, classification of combat injuries of the limbs.
22. The concept of a gunshot fracture. Criteria for diagnosing a gunshot fracture.
23. Clinical manifestations of gunshot injuries of the extremities.
24. Diagnosis of combat trauma of the musculoskeletal system.
25. Amount of assistance at the stages of medical evacuation to victims with injuries of the musculoskeletal system.
26. Damage to the neurovascular bundles of the extremities: types, diagnostics, the amount of assistance at the stages of medical evacuation.
27. Definition of the concept of "combat damage to the nervous system": gunshot wounds, explosive injuries, injuries.
28. Combat injuries of the skull and brain. Penetrating and non-penetrating wounds of the skull and brain.
29. The volume of assistance to victims with combat craniocerebral injuries at the stages of medical evacuation.
30. General principles of primary surgical treatment of wounds of the skull and brain.
31. Clinical forms of closed injuries of the spine and spinal cord.
32. Gunshot wounds of the spine and spinal cord.
33. The amount of assistance at the stages of medical evacuation to victims with combat injuries of the spine and spinal cord.
34. General principles of primary surgical treatment of injuries of the spine and spinal cord.

### **Module III Combat combined defeats**

1. The energy of an atomic explosion, its types and damaging factors.
2. Clinical course of combined radiation injuries.
3. Medical care for combined radiation injuries at the stage of evacuation and in the hospital.
4. Classification of chemical warfare agents.

5. Phosphorus-organic toxic substances and their effect on the body of the victim. FOV antidotes.

6. Poisonous substances of skin-resorptive action. Clinical picture, pathogenesis, treatment.

7. Poisonous substances of general poisonous action. Clinical picture, pathogenesis, treatment.

8. Asphyxiating poisonous substances. Clinical picture, pathogenesis, treatment.

9. Amount of assistance at the stages of medical evacuation in case of combined chemical injuries.

10. Classification of thermal lesions and frostbite.

11. Diagnosis of the depth and area of burns. Definitions of the concept of "burn disease" and "burn shock".

12. Burn of the respiratory tract.

13. Electrical injury.

14. Cold injury: diagnosis, clinical course, treatment at the stages of medical evacuation.

15. Napalm burns. Features of the clinical picture and tactics of managing the affected.

### **Criteria for assessing the oral response, colloquia**

"5 points" is given to the student if he gives the correct answers to the questions under discussion, which are distinguished by the depth and completeness of the disclosure of the topic, is able to draw conclusions and generalizations, give reasoned answers that are logical and consistent.

"4 points" is given to the student if he gives the correct answers to the questions under discussion, which differ in the depth and completeness of the disclosure of the topic, is able to draw conclusions and generalizations, but one or two errors in the answers are allowed.

"3 points" is given to the student if he gives answers to the questions under discussion that do not fully reveal him, there is no logical construction of the answer, and he makes several mistakes.

"2 points" is given to the student if he gives answers to the questions under discussion, which show that he does not know the material of the topic, cannot give reasoned answers, serious errors are made in the content of the answer.

### **1. Control tests**

Tests are necessary both to control knowledge in the process of the current intermediate certification, and to assess knowledge, the result of which may be a test.

When working with tests, the student is asked to choose one answer from three to four offered. At the same time, the tests are not the same in their complexity. Among the proposed there are tests that contain several options for correct answers. The student must indicate all the correct answers.

Tests are designed for both individual and collective decision. They can be used in both classroom and self-study. The selection of tests necessary for the control of knowledge in the process of intermediate certification is made by each teacher individually.

Module 1. Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries

1. The specificity of the action of firearms injuring projectiles is:

- a) formation of a temporary pulsating cavity
- b) amount of tissue damage
- c) nature of tissue damage
- d) the amount of kinetic energy absorbed by the tissues

2. Which of the following indicates ongoing internal bleeding into the pleural cavity?

- a) pale skin
- b) low blood pressure
- c) hemoptysis

d) positive Ruviroi-Gregoire test

3. In case of penetrating wounds of the abdomen, the wounded should be operated on first of all:

a) in shock

b) with diffuse peritonitis

c) with evisceration of internal organs

d) with intra-abdominal bleeding

4. An absolute sign of a penetrating wound of the abdomen is:

a) muscle tension of the anterior abdominal wall

b) symptom of peritoneal irritation

c) outflow of the contents of hollow organs from the wound

d) plank belly

5. A symptom indicating the valvular nature of pneumothorax is:

a) weakening or absence of breathing

b) progressively increasing respiratory failure

c) decrease in respiratory excursions of the chest on the side of the lesion

d) characteristic air suction sound

## Module 2. Injuries to the limbs, skull, spine

1. How is it necessary to carry out transport immobilization of a fracture of the shin bones?

a) Dieterichs tire

b) five Cramer tires

c) three tires Cramer

d) CITO tire

2. The absolute symptom of fat embolism in limb injuries is

a) acute respiratory failure

b) hypothermia

- c) disorders of consciousness
  - d) the appearance of petechial rash on the skin of the anterior surface of the body
3. Transport immobilization of fractures of the humerus is carried out with a splint:
- a) Dieterichs
  - b) Gerasimov
  - c) Cramer
  - d) Elansky
4. An absolute sign of a skull base fracture is:
- a) loss of consciousness at the time of injury
  - b) diffuse headache
  - c) psychomotor agitation
  - d) liquorrhea from the nose (ear canal)
5. The duration of compression of one limb with a severe degree of prolonged compression syndrome is:
- a) 8 or more hours
  - b) does not exceed 4 hours
  - c) up to 6 hours
  - d) 7-8 hours

### Module 3. Combat combined defeats

1. The most vivid picture of traumatic shock is manifested in gunshot wounds:
- a) proximal limbs
  - b) head or spine
  - c) chest
  - d) abdomen
2. Combined lesions occur as a result of exposure to:
- a) three or more damaging factors

- b) two or more damaging factors
- c) one damaging factor, but on different segments of the body
- d) one damaging factor, but on different body systems

3. What determines the degree of burn from light radiation?

- a) duration and intensity of light emission
- b) ambient temperature (winter-summer)
- c) light intensity
- d) clothing thickness

4. The first task in assisting burnt fire mixtures is:

- a) termination of the damaging factor
- b) carrying out the simplest resuscitation measures
- c) application of aseptic dressings
- d) administration of painkillers

5. The morphological characteristics of a second degree burn include:

- a) partial necrosis of the skin with preservation of the deeper layers of the dermis
- b) complete death of the skin
- c) death and detachment of the outer layers of the epidermis, the formation of blisters
- d) necrosis of the skin and deeper tissues

The results of the test tasks are evaluated by the teacher on a five-point scale for attestation and are taken into account in the "pass" - "fail" system.

The grade "Excellent" is given with the correct answer to more than 90% of the tests proposed by the teacher.

Grade "Good" - with the correct answer to 71-90% of the tests.

Grade "Satisfactory" - with the correct answer to 50-70% of the tests offered to the student.

Grade "Unsatisfactory" - with the correct answer to less than 50% of the tests offered to the student.



Intermediate certification in the discipline "Military field surgery"

2. Questions for the intermediate certification in the discipline "Military field surgery" - 9 semester

1. Medical sorting and evacuation of the wounded.
2. Organization of care and surgical treatment at the stages of evacuation.
3. Amount of assistance to the wounded with chest injuries at the stages of medical evacuation.
4. Classification of closed injuries and open wounds of the chest.
5. Damage to the lungs, trachea and bronchi.
6. Damage and injury to the heart.
7. Damage to the esophagus.
8. Consequences of damage to the organs of the chest cavity.
9. Drainage of the pleural cavity in pneumothorax and hemothorax.
10. Thoracotomy for chest injuries.
11. Videothoracoscopy for chest trauma.
12. Treatment of injuries of the cervical and thoracic esophagus.
13. Classification of wounds and injuries of the abdomen.
14. Clinical picture and diagnosis of gunshot wounds of the abdomen.
15. Clinical picture and diagnosis of closed abdominal injuries.
16. Surgical treatment for wounds and abdominal trauma.
17. The volume of medical care at the stages of medical evacuation for wounds and injuries of the abdomen.
18. Classification of pelvic fractures, the concept of stable and unstable fractures.
19. Symptoms and diagnosis of pelvic fractures with and without damage to the pelvic ring.
20. Shock, blood loss and wound infection in gunshot injuries of the pelvis.
21. Injuries and wounds of the kidneys and ureters.

22. Damage to the bladder and urethra.
23. Damage to the scrotum and its organs.
24. Types of firearms and other types of conventional weapons, characteristics of their damaging effect. Features of modern wounds caused by firearms, their classification.
25. Wound ballistics and morphological and functional changes in tissues in gunshot wounds.
26. Primary and secondary microbial contamination of wounds, microflora and wound infection. Mechanisms of healing of gunshot wounds by primary and secondary intention.
27. Purposes and characteristics of primary surgical debridement and repeated surgical treatment for gunshot wounds. Indications and contraindications for surgical treatment of wounds.
28. The role of transport immobilization in the prevention of traumatic shock, bleeding, secondary tissue damage and infectious complications of wounds at the stages of medical evacuation.
29. Improvised and service means of transport immobilization. Application technique and choice of transport splints for various localizations of injuries of the upper and lower extremities, pelvis, and spine.
30. The reaction of the body to blood loss. Determination of the amount of blood loss.
31. Amount of assistance at the stages of medical evacuation in case of blood loss. Rules for applying a hemostatic tourniquet.
32. Assistance to the wounded with damage to the main vessels.
33. Treatment of acute blood loss.
34. Types of local anesthesia and the mechanism of action of local anesthetics.
35. Characteristics of the action of local anesthetics, complications of local anesthesia.
36. Cervical vagosympathetic blockade according to A. V. Vishnevsky.

37. Intercostal and paravertebral blockade.
38. Anesthesia of the brachial plexus, femoral, sciatic nerves.
39. Case blockade of the shoulder, forearm, thigh, lower leg.
40. Pathogenesis of traumatic shock. Classification, clinical picture and diagnosis.
41. Erectile and torpid phases of shock. Types of terminal states.
42. Treatment of traumatic shock at the stages of medical evacuation and in the hospital.
43. Reasons for the development of the syndrome of prolonged compression and its pathogenesis.
44. Periodization of the crush-syndrome. Clinical manifestations. Classification.
45. Approaches to the treatment of crush-syndrome. Assistance at the stages of medical evacuation of the wounded and victims with crush-syndrome.
46. Causes, types, classification of combat injuries of the limbs.
47. The concept of a gunshot fracture. Criteria for diagnosing a gunshot fracture.
48. Clinical manifestations of gunshot injuries of the extremities.
49. Diagnosis of combat injury of the musculoskeletal system.
50. Amount of assistance at the stages of medical evacuation to victims with injuries of the musculoskeletal system.
51. Damage to the neurovascular bundles of the extremities: types, diagnosis, amount of care at the stages of medical evacuation.
52. Definition of the concept of "combat damage to the nervous system": gunshot wounds, explosive injuries, injuries.
53. Combat injuries of the skull and brain. Penetrating and non-penetrating wounds of the skull and brain.

54. The volume of assistance to victims with combat craniocerebral  $\phi$ opopгaнические отравляющие вещества injuries at the stages of medical evacuation.

55. General principles of primary surgical treatment of wounds of the skull and brain.

56. Clinical forms of closed injuries of the spine and spinal cord.

57. Gunshot wounds of the spine and spinal cord.

58. Amount of assistance at the stages of medical evacuation to victims with combat injuries of the spine and spinal cord.

59. General principles of primary surgical treatment of injuries of the spine and spinal cord.

60. Energy of an atomic explosion, its types and damaging factors.

61. Clinical course of combined radiation injuries.

62. Medical care for combined radiation injuries at the stage of evacuation and in the hospital.

63. Classification of chemical warfare agents.

64. Organophosphate poisons and their effect on the body of the victim. OP antidotes.

65. Poisonous substances of dermatoresorptive action. Clinical picture, pathogenesis, treatment.

66. Poisonous substances of general poisonous action. Clinical picture, pathogenesis, treatment.

67. Asphyxiating poisonous substances. Clinical picture, pathogenesis, treatment.

68. Amount of assistance at the stages of medical evacuation in case of combined chemical injuries.

69. Classification of thermal lesions and frostbite.

70. Diagnosis of the depth and area of burns. Definitions of the concept of "burn disease" and "burn shock".

71. Burn of the respiratory tract.

72. Electrical injury.

73. Cold injury: diagnosis, clinical course, treatment at the stages of medical evacuation.

74. Napalm burns. Features of the clinical picture and tactics of managing the affected.

Requirements for evaluating the results of the test in "Military Field Surgery":

"Passed" - a full, detailed answer to the question was given, the ability to identify essential and non-essential features, causal relationships was shown. The answer is clearly structured, logical, written in literary language in terms of science. Shortcomings or minor errors corrected by the student with the help of the teacher may be made.

"Not passed" - no answers were received on the basic questions of the discipline.

3. Situational tasks for the intermediate certification in the discipline "Military field surgery"

Task No. 1. Private S., 22 years old, received a gunshot wound to the head during the battle. After 1 hour delivered to hospital. Objectively: consciousness is preserved, pulse - 80 beats. per minute, breathing is normal, blood pressure is 115/70 mm Hg. Art. Organic symptoms of damage to the central nervous system are not determined. In the parietal region - a lacerated wound measuring 8x15 cm with moderate bleeding. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Task No. 2. Sergeant Major II rank O., 30 years old, was wounded in the chest by a secondary wounding projectile during an explosion. When providing first aid, an occlusive dressing was applied, narcotic drug was introduced from a syringe tube under the skin. 30 minutes after being wounded, he was taken to the hospital Objectively: general condition of

moderate severity. BP - 80/40 mm Hg. Art. Pulse - 120 beats. per minute, rhythmic, weak filling. On the posterior axillary line at the level of the VI rib - a torn wound 3x4 cm in size, sucking air. Severe shortness of breath, cyanosis of the lips, anxiety, attempts to sit down. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Task No. 3 Foreman 2 articles V., aged 20, received a gunshot wound to the abdomen. Delivered to hospital. When providing first aid, an aseptic dressing was applied from an individual dressing bag. Objectively: the general condition is severe. Pulse - 120 beats. in min. weak filling. BP - 80/40 mm Hg. Art. There is a 2x0.5 cm wound on the anterior abdominal wall in the region of the right hypochondriac region. Pronounced tension of the abdominal wall with its sharp soreness. positive symptoms of peritoneal irritation. Dullness in the flanks of the abdomen, more distinct in the area of the wound. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Task No. 4. Private 3., aged 22, received a gunshot wound to the pelvis. Delivered to hospital 1 hour after being wounded. When providing first aid, an aseptic bandage was applied. Objectively: the condition is extremely serious. Pulse -130 beats. in min. BP - 80/50 mm Hg. The wound is 3x2 cm above the greater trochanter of the thigh. Hematoma and tenderness in the region of the ilium. Tension of the abdominal muscles, soreness, symptoms of irritation of the peritoneum. Doesn't urinate. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Task No. 5. Sailor V., 20 years old, in the emergency compartment of a submarine was pressed by a broken electric motor to the bulkhead. The pressure lasted 6 hours. Without first aid delivered to the PMP submarine. Objectively: the patient's condition is grave. Pulse - 80 beats. in min. BP - 90/40 mm Hg. Art. The lower limb is pale, sharply edematous, cold to the touch. Pulsation of peripheral vessels on the feet is sharply weakened. Pain sensitivity is reduced. Active movements in the knee and ankle joints are

reduced. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Task No. 6. Lieutenant T., 23 years old, was washed away by a wave while on top watch in stormy conditions in winter. Removed from water after 10 minutes. Objectively, the general condition is of moderate severity. Paleness of the skin, chills, goosebumps. Speech is slow, drowsy. Pulse - 60 beats. in min. BP - 90/70 mm Hg. Art. Respiratory rate - 14 per minute. Rectal temperature 33°C. Formulate and justify the diagnosis. Provide first aid.

Task No. 7. Private B., aged 22, received a burn on his lower leg and a thigh injury. Delivered to hospital in 40 minutes. When providing first aid, an aseptic bandage was applied to the thigh and lower leg. Objectively: the general condition is satisfactory. Pulse - 80 beats. per min, blood pressure - 100/55 mm Hg. Art., on the outer surface of the thigh - a lacerated wound measuring 8 x 4 cm with damage to the muscles of the thigh. Moderate bleeding from the wound. On the inner surface of the lower leg hyperemia of the skin and epidermal blisters filled with a yellowish liquid. Formulate and justify the diagnosis. Provide first aid.

Task No. 8. Private 3., 21 years old, during training at the training ground received a gunshot wound to the hand with a grenade fuse. Delivered in 40 minutes to the garrison military field hospital. When providing first aid, a tourniquet was applied to the forearm, an aseptic bandage, a mesh splint. Objectively: general condition of moderate severity. Pulse - 100 beats. per minute, rhythmic. BP - 100/50 mm Hg. Art. There is an extensive lacerated wound on the palmar surface of the hand, extending to the rear. In the wound, multiple fragments of metacarpal bones and bones of the wrist. The wrist joint was opened. The fingers are pale, insensitive, there are no active movements in them. Formulate and justify the diagnosis. Provide first medical and qualified medical assistance.

Requirements for evaluating the results of solving situational problems.

"Excellent" - a full, detailed answer to the question was given, the ability to highlight essential and non-essential signs, causal relationships was shown. The answer is clearly structured, logical, written in literary language in terms of science. Shortcomings or minor errors corrected by the student with the help of the teacher may be made.

"Good" - a complete, but not sufficiently consistent answer to the question was given, but the ability to highlight essential and non-essential signs and cause-and-effect relationships is shown. The answer is logical and stated in terms of science. 1-2 mistakes can be made in the definition of basic concepts that the student finds it difficult to correct on his own.

"Satisfactory" - an incomplete answer is given, the logic and sequence of presentation have significant violations. Gross mistakes were made in determining the essence of the disclosed concepts, theories, phenomena, due to the student's misunderstanding of their essential and non-essential features and relationships. There are no conclusions in the answer. The ability to reveal specific manifestations of generalized knowledge is not shown. Speech design requires amendments, correction.

"Unsatisfactory" - no answers were received to the main questions of the task.





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**SCHOOL OF MEDICINE**

**KEYS**

correct answers, including evaluation criteria for

**FUND OF EVALUATION TOOLS**

discipline "Military field surgery"

specialist's educational program

31.05.01 General medicine

Full-time training form

Vladivostok

2021

Scale for assessing the level of achievement of learning outcomes for the  
current and intermediate certification in the discipline  
"Military Field Surgery"

Points (rating score)	Levels of achievement learning		Requirements for the formed competencies
	Current and Intermedia te attestation	Intermediate certification	
100 – 86	Elevated	credit" / "excellent"	The student freely and confidently finds reliable sources of information, operates with the information provided, has excellent skills in analyzing and synthesizing information, knows all the main methods for solving problems provided for by the curriculum, knows typical mistakes and possible difficulties in solving a particular problem, and is able to choose and effectively apply appropriate method for solving a specific problem
85 – 76	Base	"credit" / "good"	In most cases, he is able to identify reliable sources of information, process, analyze and synthesize the proposed information, choose a method for solving a problem and solve it. Makes single serious mistakes in solving problems, experiences difficulties in rare or difficult cases of solving problems, does not know typical mistakes and possible difficulties in solving a particular problem
75 – 61	Threshold	""credit"" / "satisfactory"	Makes mistakes in determining the reliability of sources of information, is able to correctly solve only typical, most common problems in a particular area (process information, choose a method for solving a problem and solve it)
60 – 0	Level not reached	"not credit" / "unsatisfactory"	He does not know a significant part of the program material, makes significant mistakes, performs practical work uncertainly, with great difficulty.

### Evaluation tools for monitoring

#### 1. Criteria for assessing the oral response, colloquia

"**Excellent**" is given to a student if he gives the correct answers to the questions under discussion, which are distinguished by the depth and

completeness of the disclosure of the topic, is able to draw conclusions and generalizations, give reasoned answers that are logical and consistent.

**“Good”** is given to the student if he gives the correct answers to the questions under discussion, which are distinguished by the depth and completeness of the disclosure of the topic, is able to draw conclusions and generalizations, but one or two errors in the answers are allowed.

**“Satisfactory”** is given to the student if he gives answers to the questions under discussion that do not fully reveal him, there is no logical construction of the answer, and he makes several mistakes.

**"Unsatisfactory"** is given to the student if he gives answers to the questions under discussion, which show that he does not know the material of the topic, cannot give reasoned answers, serious errors are made in the content of the answer

## **2. Criteria for assessing the performance of test tasks**

**"Excellent"** is set with the correct answer to more than 90% of the tests proposed by the teacher.

**"Good"** - with the correct answer to 71 - 90% of the tests.

**"Satisfactory"** - with the correct answer to 50 - 70% of the tests offered to the student.

**"Unsatisfactory"** - with the correct answer to less than 50% of the tests offered to the student.

### **Sample answers to test tasks**

#### **Module 1. Wounds and closed injuries of the chest, abdomen, pelvis, gunshot injuries**

1 - a	2 - d	3 - d	4 - c	5 - b
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#### **Модуль 2. Ранения конечностей, черепа, позвоночника**

1 - c	2 - d	3 - c	4 - d	5 - d
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### Модуль 3. Боевые комбинированные поражения

1 - a	2 - b	3 - a	4 - a	5 - c
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#### 1. Criteria for evaluating the results of the intermediate certification (test).

**"Passed"** - a full, detailed answer to the question was given, the ability to identify essential and non-essential features, causal relationships was shown. The answer is clearly structured, logical, written in literary language in terms of science. Shortcomings or minor errors corrected by the student with the help of the teacher may be made.

**"Not passed"** - no answers were received on the basic questions of the discipline.

#### 2. Criteria for evaluating the results of solving situational problems.

**"Excellent"** - a full, detailed answer to the question was given, the ability to highlight essential and non-essential signs, causal relationships was shown. The answer is clearly structured, logical, written in literary language in terms of science. Shortcomings or minor errors corrected by the student with the help of the teacher may be made.

**"Good"** - a complete, but not sufficiently consistent answer to the question was given, but the ability to highlight essential and non-essential signs and cause-and-effect relationships is shown. The answer is logical and stated in terms of science. 1-2 mistakes can be made in the definition of basic concepts that the student finds it difficult to correct on his own.

**"Satisfactory"** - an incomplete answer is given, the logic and sequence of presentation have significant violations. Gross mistakes were made in determining the essence of the disclosed concepts, theories, phenomena, due to the student's misunderstanding of their essential and non-essential features and relationships. There are no conclusions in the answer. The ability to reveal

specific manifestations of generalized knowledge is not shown. Speech design requires amendments, correction.

**“Unsatisfactory”** - no answers were received to the main questions of the task.

### **Sample responses to situational tasks**

Task No. 1. Diagnosis: shrapnel tangential wound of the parietal region without damage to the bones of the skull. When providing first aid, a change of dressing is necessary; tetanus toxoid 0.5 ml intramuscularly; intramuscular antibiotics. When providing qualified surgical care, primary surgical treatment of the wound is performed with economical excision of its edges.

Task No. 2. Diagnosis: blind shrapnel penetrating wound of the chest. Open pneumothorax. Traumatic shock II degree. When providing first medical aid: correction of an imperfect occlusive dressing; the introduction of painkillers (promedol 2% - 1 ml) intramuscularly; the introduction of tetanus toxoid 0.5 ml intramuscularly; intramuscular antibiotics; paravertebral or vagosympathetic novocaine blockade on the side of injury (novocaine 0.25% - 60 ml); oxygen supply; drainage of the pleural cavity in the second intercostal space along the midclavicular line with a plastic tube with a diameter of 0.5-0.6 cm with a rubber valve according to Bullau-Petrov. When providing qualified surgical care, primary surgical treatment of the wound is performed. After excision of non-viable tissues, sutures are applied in layers to the muscles, completely sealing the pleural cavity.

Task No. 3. Diagnosis: blind shrapnel penetrating wound of the abdomen. Traumatic shock II degree. Intra-abdominal bleeding. When providing first medical aid, it is necessary to: correct the bandage; ice pack on the anterior abdominal wall; - infusion therapy of traumatic shock in the amount of 500 - 1000 ml (crystalloid solutions), the introduction of promedol 2% - 1 ml; - intramuscularly injected tetanus toxoid 0.5 ml, vikasol 2.0 ml intramuscularly, 10.0 - 10% calcium chloride intravenously; intramuscular antibiotics; oxygen inhalation. After stabilization of hemodynamics, the patient needs qualified surgical care for urgent indications.

When providing qualified surgical care: laparotomy in order to finally stop bleeding; primary surgical treatment of the wound; the scope of the surgical intervention will be determined during the operation, depending on the nature of the damage.

Task No. 4. Diagnosis: blind shrapnel wound of the pelvis. Gunshot fracture of the iliac bone. Intraperitoneal injury of the bladder. Traumatic shock II degree. When providing first aid: the introduction of painkillers (promedol 2% - 1 ml) intramuscularly; novocaine blockade according to Shkolnikov-Selivanov (novocaine 0.25% - 400 ml) infusion-transfusion therapy of traumatic shock in a volume of 3 liters (colloidal solutions - 1 l, crystalloid solutions - 1.5 l, erythrocyte mass - 0.5 l); bladder catheterization; the introduction of antibiotics; the introduction of tetanus toxoid 0.5 ml intramuscularly; the wounded person is immobilized on a stretcher while lying on his back, his legs are bent at the knee joints and connected to each other, with rollers in the popliteal region (the "frog" position); evacuation at the stage of providing qualified medical care. When providing qualified surgical care: laparotomy with suturing the wound, the bladder with a double-row suture, placing a urethral catheter; primary surgical treatment of the wound.

Tasks No. 5. Diagnosis: syndrome of prolonged compression of the lower limb (moderate severity). When providing first medical aid: intravenous administration of blood substitutes (disol, trisol 1000-1500 ml, bicarbonate solution 4% - 400 ml, calcium chloride 10% - 10 ml); bladder catheterization with control of hourly diuresis; case novocaine blockade in the upper third of the thigh (0.25% novocaine 200 ml); transport immobilization with a Dieterikhs tire; cooling of the injured limb (ice pack); cardiovascular (caffeine) and antihistamines (diphenhydramine 2% - 2 ml) drugs; alkaline salt drink; lasix 40-50 mg (after stabilization of hemodynamic parameters); oxygen inhalation. When providing qualified surgical care: fasciotomy throughout the entire limb segment; continuation of infusion therapy.

Task No. 6. Diagnosis: general cooling. Mild severity (adynamic stage). When providing first aid: change of wet uniforms; warming with radiant heat or heating pads laid on the area of the heart, liver, in the projection of large vessels; intravenous

administration of 60-90 mg of prednisolone, 40-60 ml of 40% glucose solution, 10 ml of 10% calcium chloride solution, as well as 400.0 ml of 0.9% sodium chloride solution heated to 60 degrees, reopoliglyukin 400 ml; oxygen inhalation; hot drink.

Task No. 7. Diagnosis: laceration of the soft tissues of the thigh. Burn I-II degree of the lower leg 2%. When providing first aid: the introduction of painkillers (promedol 2% - 1 ml) intramuscularly; the introduction of antibiotics; the introduction of tetanus toxoid 0.5 ml intramuscularly; transport immobilization of the thigh and lower leg with a Dieterichs's splint; aseptic bandage on the wound of the thigh and the burn surface of the lower leg. When rendering qualified surgical care: - primary surgical treatment of a thigh wound.

Task No. 8. Diagnosis: blind shrapnel wound of the hand. Brush destruction. When providing first aid: the introduction of painkillers (promedol 2% - 1 ml intramuscularly); case novocaine blockade on the shoulder (novocaine 0.25% - 200 ml); intramuscular antibiotics; aseptic bandage; stair rail. When providing qualified surgical care: primary surgical treatment of the wound, amputation of the hand.