PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of Surgery

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

"TRAUMATOLOGY AND ORTHOPEDICS"

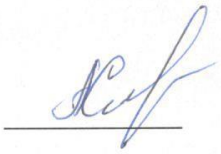
LEVEL OF HIGHER EDUCATION Second (master's) level
DEGREE OF HIGHER EDUCATION Master's degree
BRANCH OF KNOWLEDGE 22 Healthcare
SPECIALTY 222 Medicine

Reviewed and approved
at the meeting of the department of surgery
Protocol No. 1, dated August 31 , 2022

Kyiv 2022

Working program of educational discipline Traumatology and orthopedics for the preparation of students of higher education of the second (master's) level of higher education in specialty 222 Medicine.

Agreed

The first vice-rector  Oleksandra SOROKA

(signature) (initials and surname)

1. DESCRIPTION OF THE EDUCATIONAL DISCIPLINE

<table>
<tr><td rowspan="2">Name of indicators</td><td rowspan="2">Field of knowledge, specialty, level of higher education</td><td>Characteristics of the academic discipline</td></tr>
<tr><td>full-time education</td></tr>
<tr><td rowspan="2">The number of credits is 3.0</td><td>Branch of knowledge</td><td rowspan="2">Normative</td></tr>
<tr><td><u>22 "Health care</u></td></tr>
<tr><td></td><td rowspan="5">Specialty:
222 "Medicine"</td><td>A year of training</td></tr>
<tr><td></td><td>5th</td></tr>
<tr><td></td><td>Semester</td></tr>
<tr><td rowspan="2">The total number of hours is 90</td><td>IX</td></tr>
<tr><td>Lectures</td></tr>
<tr><td rowspan="8"></td><td rowspan="8">Level of higher education :
master's degree</td><td>10 hours</td></tr>
<tr><td>Practical, seminar</td></tr>
<tr><td>50 hours</td></tr>
<tr><td>Individual work</td></tr>
<tr><td>40 hours</td></tr>
<tr><td>Type of control:</td></tr>
<tr><td>Differentiated scoring</td></tr>
</table>

2. COMPETENCES

The discipline ensures that students acquire ***the following competencies:***

General competences (CG)	
ZK-1	Ability to abstract thinking, analysis and synthesis.
ZK-2	Ability to learn and master modern knowledge.
ZK-3	Ability to apply knowledge in practical situations.
ZK-4	Knowledge and understanding of the subject area and understanding of professional activity.
ZK-5	Ability to adapt and act in a new situation.
ZK-6	Ability to make informed decisions.
ZK-7	Ability to work in a team.
ZK-8	Ability to interpersonal interaction.
ZK-10	Ability to use information and communication technologies.
ZK-11	Ability to search, process and analyze information from various sources.
ZK-12	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professional competences (FC)	
FC-1	Ability to collect medical information about the patient and analyze clinical data.
FC-2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
FC-3	Ability to establish a preliminary and clinical diagnosis of the disease.

FK-4	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases.
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-9	Ability to carry out medical evacuation measures.
FC-10	Ability to perform medical manipulations.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-24	Adherence to ethical principles when working with patients and laboratory animals.
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
Program Learning Outcomes (PLP)	
PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN-4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PRN-6	Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the control of the head physician in the conditions of the health care institution (according to list 2) .
PRN-7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
PRN-8	Determine the main clinical syndrome or what causes the severity of the condition of the victim/injured (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care

	institution, outside its borders) , including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
PRN-9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation , including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PRN-18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-22	Apply modern digital technologies , specialized software provision , statistical methods analysis data for solving complex protection tasks health _
PRN-24	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.
PRN-25	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
PRN-27	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.

3. PURPOSE AND OBJECTIVES OF THE EDUCATIONAL DISCIPLINE

Purpose: study of traumatology and orthopedics - *the final goals are* established on the basis of the OPP of training a doctor by specialty, according to the content section (natural and scientific training) and are the basis for building the content of the educational discipline. The description of goals is formulated through skills in the form of target tasks (actions). On the basis of the final goals, specific goals are formulated for each section in the form of certain skills (actions), target tasks that ensure the achievement of the final goal of studying the discipline.

Task: to teach students how to manage patients with injuries and the most common orthopedic diseases of the musculoskeletal system. Demonstrate mastery of injury and orthopedic disease prevention methods . To explain the principles of restorative treatment and rehabilitation of patients with lesions of

the musculoskeletal system. Carry out differential diagnosis of traumatic injuries of the musculoskeletal system, establish a preliminary diagnosis for injuries and the most common orthopedic diseases.

4. CONTENTS OF THE EDUCATIONAL DISCIPLINE PROGRAM " *TRAUMATOLOGY AND ORTHOPEDICS"*

The discipline program consists of 40 hours of practical classes, 10 hours of lectures and 40 hours of independent work, a total of 90 hours are allocated to the discipline.

The types of training sessions according to the curriculum are: A) lectures;

B) practical classes (seminar classes);

C) independent work of students;

The lectures cover the main theoretical material of a separate or several topics of the academic discipline, reveal the main problematic issues.

Practical classes (seminar classes) provide students with a detailed consideration of individual theoretical provisions of the academic discipline with the teacher and the formation of the skills and abilities of their practical application through the student's individual performance of formulated tasks and solving situational problems.

The independent work of students involves the student's mastery of the educational material, namely, the independent study of individual topics of the academic discipline in the time free from mandatory educational classes, and also involves preparation for all types of control. The educational material of the discipline provided by the working curriculum for assimilation by the student in the process of independent work is submitted to the final control along with the educational material that was worked out during classroom classes.

Chapter 1.

General issues of traumatology and orthopedics

SPECIFIC GOALS:

-interpret the concept of "traumatology and orthopedics" and know the specifics of diagnosing injuries or diseases of the support and movement system;

- learn the principles of classification of typical injuries and orthopedic diseases;

able to provide emergency medical care to victims with fractures at the pre-hospital stage;

- to explain the pathogenetic features of the course of a traumatic disease in field injuries;

- draw up treatment and rehabilitation schemes for victims with fractures and their complications;

- learn the principles of injury prevention and orthopedic diseases.

Topic 1. Introduction to the specialty. Peculiarities of examination of traumatological and orthopedic patients. Modern principles of fracture treatment. Damage to the shoulder girdle.

Definition of traumatology and orthopedics as a discipline. History of development and modern achievements of domestic traumatology and orthopedics.

Peculiarities of anamnesis collection in patients with pathology of the support and movement system. Methods of determining the axis of the limbs, the spine. The main types of deformation of the limbs and spine. Measuring the length of the volume of the limbs. Types of limb shortening and methods of their determination. Methods of determining the volume of movement in the joints. Types of contractures.

Definition of the concept of "fracture". Classification of fractures, clinic, diagnosis, treatment. Complications that occur in the treatment of fractures: delayed union, false joints, improper union. The causes of these complications, their prevention and treatment.

Classification of open fractures and their anatomical and morphological features. The content of medical care for victims with open fractures at the pre- hospital stage and the main principles of providing care at the hospital stage.

Topic 2. Traumatic dislocations. Damage to ligaments, tendons and muscles.

Absolute and relative clinical signs of dislocations, injuries and damage to tendons and muscles. Definition of the terms "dislocation", "subluxation". Pathomorphology of dislocation. General classification of dislocations. Mechanogenesis (shoulder, forearm, hips), their classification and clinic. Provision of medical care at the pre- hospital stage. Treatment of sprains in the conditions of a specialized hospital. Complications of dislocations, their prevention and treatment.

Topic 3. Limb amputation. Rehabilitation and prosthetics of disabled people with limb defects. Outpatient treatment of traumatological and orthopedic patients.

Indications for limb amputation. Methods and methods of limb amputation.

Purpose and tasks of prosthetics. Indications and contraindications for prosthetics. Types of limb prostheses - cosmetic, active-cosmetic. Orthopedic devices, their purpose, device. Indications for the use of orthopedic devices. Orthopedic shoes. Indications for prescribing orthopedic shoes.

Principles of organization of outpatient care for patients with injuries and orthopedic diseases. Organization of the work of the trauma center. Structural and functional subdivisions of the trauma center and consultative diagnostic center.

Section 2.

Damage to the pelvis, spine, bones and joints of the belts of the upper and lower limbs. Traumatic disease

SPECIFIC GOALS:

- ***to explain*** modern ideas about the mechanisms of damage to the pelvis, bones and joints of the lower limb;
- ***to explain the*** pathogenetic features of the course of the traumatic disease in polytraumas . Define the concept of traumatic shock, be able to provide comprehensive treatment of traumatic shock.
- ***learn*** the principles of classification of injuries of the pelvis, bones and joints of the lower limb;
- ***learn*** the principles of diagnosing injuries to the pelvis, bones and joints of the lower limb;
- ***draw up*** schemes for conservative and operative treatment of injuries to the pelvis, bones and joints of the lower extremity;
- ***to be able to*** diagnose the syndrome of prolonged crushing. Know the etiology and pathogenesis.
- ***to be able to*** provide emergency medical aid to victims with gunshot wounds to bones and joints.

Topic 4. Damage to the upper limb. Damage to the spine.

Damage to the scapula. Classification, diagnosis, treatment. Dislocations and fractures of the clavicle. Diagnosis, conservative and operative treatment.

Mechanogenesis of fractures of the proximal part of the humerus. Classification, diagnosis, treatment. Fractures of the distal end of the humerus. Trauma mechanogenesis , classification, diagnosis, treatment. Fractures of the ulnar process. Trauma mechanogenesis , clinic, diagnosis, treatment. Fractures of the head of the radial bone. Classification, mechanism of injury. Clinic, diagnosis, treatment.

Fractures of the diaphyses of the bones of the forearm. Classification, damage mechanism. Features of displacement of fragments. Clinic, diagnosis. Indications for conservative and operative methods of treatment.

Fractures of the distal end of the radius and their types. Mechanogenesis of damage. Clinic, diagnosis, treatment.

Fractures of the bones of the hand. Fractures of the wrist and metacarpal bones of the hand. Typical mechanisms of injury. Clinic, diagnosis, treatment. Damage to the tendons of the fingers. Clinic, diagnosis, treatment.

Classification of spinal injuries, their mechanogenesis , pathomorphology . Concept

"stable" and "unstable" spinal injuries. Clinical manifestations of complicated and uncomplicated injuries depending on their localization. Provision of medical assistance at the pre- hospital stage for various spinal injuries. Treatment of spinal injuries at the hospital stage. Conservative and operative

methods of treatment of complicated and uncomplicated spinal injuries, their indications and execution technique. Social and professional rehabilitation of patients with spinal cord injuries.

Topic 5. Damage to the pelvis. Damage to the bones and joints of the lower limb. Superimposition of skeletal extraction and AZF.

Classification of pelvic injuries and mechanogenesis of various variants of their formation. Clinical picture with various injuries of the pelvis. Clinical features of complicated pelvic injuries and their diagnosis. Principles of providing medical care to patients at the pre- hospital stage. Conservative and operative methods of treatment of patients with various types of pelvic injuries.

Classification of fractures of the proximal thigh. Damage mechanism. Clinic, diagnosis. Provision of medical care at the pre- hospital stage. Features of reparative regeneration of fractures of the proximal thigh. Methods of treatment, their indications and features depending on the localization of fractures and their types.

Fractures of the diaphysis of the femur. Trauma mechanism, clinic, diagnosis. Features of the displacement of fragments depending on the location of the fracture. Indications for conservative and operative treatment. Fractures of the femoral condyles. Classification, mechanism of injury. Clinic, diagnosis. The main principles of treatment. Indications for operative and conservative treatment methods.

Fractures of the patella . Clinic, diagnosis. Methods of treatment depending on the type of fracture. Damage to the ligaments of the knee joint. Trauma mechanism, clinic, diagnosis. Methods of conservative and operative treatment of them. Damage to the menisci. Injury mechanism, clinic, diagnosis, treatment.

Damage to the soft tissues of the leg (muscles, calcaneal tendon, small tibial and large tibial nerves, blood vessels). Clinic, diagnosis and their treatment.

Fractures of the tibia. Classification. Injury mechanism, clinic, diagnosis. Conservative and operative methods of treatment of tibial bone fractures, indications for them.

Fractures of the tibia. Classification, injury mechanism, diagnosis. Conservative and operative treatment. Closed reposition technique for typical bone fractures. Fractures of the supracalcaneal and calcaneal bones. The mechanism of their damage. Clinic, diagnosis, treatment. Fractures of the metatarsal bones and phalanges of the fingers. Clinic, diagnosis, treatment. Peculiarities of treatment of foot bone fractures. Algorithm of superimposing skeletal extraction and AZF.

Topic 6. Traumatic disease. Polytrauma . Syndrome of prolonged crushing .

Chronic crushing syndrome, etiology, pathogenesis. Classification. Phases of development. Clinic. Dependence of clinical manifestations on the mass of tissue damage, strength and duration of action of the crushing factor on them. Modern methods of treatment in the conditions of military operations and natural disasters. Features of treatment of open and closed large soft tissue injuries with and without bone fracture.

Pathogenesis of traumatic disease, periods of its course. The use of modern point scales for assessing the severity of the injured person's condition. Diagnosis, prognosis and treatment of traumatic disease.

Topic 7. Traumatic shock. Fire injuries of bones and joints.

Definition of the concept of traumatic shock. Frequency and severity of shock in war and peacetime. Modern ideas about the etiology and pathogenesis of traumatic shock. Clinical manifestations of shock at different localizations of wounds. Complex treatment of shock. Modern methods of correction of disorders of hemodynamics, breathing, metabolism and neuroendocrine disorders. The content of anti-shock measures in the conditions of military operations and extreme situations. Early prevention of shock.

Classification and algorithms for diagnosis and treatment of polytrauma built on its basis . Emergency care for victims of polytrauma . Transport immobilization. Features of treatment of multiple, combined and combined injuries of the support and movement system.

Frequency and classification of gunshot bone fractures. Clinic and diagnosis. The scope of first medical, pre-medical (paramedic), first medical and qualified surgical care.

Closed and open non-inflammatory bone fractures. Clinic and diagnosis of closed and open

fractures. The scope of first medical, pre-medical (paramedic), first medical and qualified surgical care.

Gunshot wounds of joints and limbs, their classification. General and local clinical manifestations of joint damage. Complications of joint injuries. The scope of first medical, pre-medical (paramedic), first medical and qualified surgical care. Gunshot wounds of the caste, feet and their treatment.

Section 3.

Degenerative -dystrophic, inflammatory and tumor diseases of the joints and spine.

SPECIFIC GOALS:

- ***carry out*** examinations of orthopedic patients, formulate a preliminary and carry out a differential diagnosis in the case of destructive -dystrophic, inflammatory and tumor lesions of the support and movement system.

- ***to explain*** modern ideas about the etiology and pathogenesis of osteochondrosis and osteoarthritis .

- ***to draw up*** schemes of diagnosis, treatment, prevention and rehabilitation of patients with osteochondrosis and osteoarthritis .

- ***to explain*** modern ideas about the etiology and pathogenesis of scoliotic disease, the classification of scoliotic disease and the clinic of different degrees of scoliosis, methods of conservative and operative treatment of scoliosis and indications for them.

- ***to plan*** schemes of clinical and laboratory diagnosis and treatment of inflammatory and tumor lesions of bones and joints.

- ***to diagnose*** bone and joint tuberculosis, determine the phases of the course of the disease, indications for conservative and operative treatment.

- ***learn*** the classification of tumors of cartilaginous and bone origin, their clinical and radiological signs, methods of treatment.

Topic 8. Degenerative - dystrophic diseases of the spine and joints. Pathogenesis of osteochondrosis of the spine. Biomechanics and physiology of the intervertebral segment. Stages of osteochondrosis. Clinic, diagnosis of osteochondrosis of the spine is different

localization. Indications for conservative and operative methods of treatment.

Etiology, pathogenesis of spondylosis and spondyloarthrosis. Clinic, diagnosis. Principles of treatment of spondylosis and spondyloarthrosis. Professional rehabilitation of patients with degenerative - dystrophic diseases of the spine.

Etiology and pathogenesis of deforming arthrosis. Classification and clinic of arthrosis. Diagnostics. Principles of treatment of deforming arthrosis depending on the stage of the disease. Indications for conservative and operative treatment of arthrosis of the hip, knee and ankle joints.

Topic 9. Congenital and dysplastic diseases of bones and joints. Scoliosis.

Congenital muscular torticollis, Klippel-Feil 's disease, Grisel 's disease . Congenital high position of the scapula, wing-shaped scapula. Etiology, clinic. Principles of diagnosis and treatment.

Funnel-shaped and keel -shaped chest. Pathogenesis of scoliotic disease. Classification of scoliosis . Clinic of different degrees of scoliosis. Basic principles of early recognition of scoliosis. Prevention, conservative and operative methods of treatment. Postural defects and their types. Etiology. Principles of treatment.

Congenital hip dislocation. Etiology, pathogenesis. Clinical and radiological diagnosis of congenital dislocation of the hip under the age of 1 year. Features of its treatment and diagnosis after 1 year. Prevention of congenital hip dislocation. Features of its treatment in different age groups.

Congenital clubfoot. Etiology, pathogenesis. Clinic, diagnosis. Methods of conservative and operative treatment, their indications. Clinical and anatomical forms of syndactyly and polydactyly. Treatment.

Rheumatoid arthritis. Etiology, pathogenesis, clinic. Principles of complex treatment: medicinal, orthopedic. Choice of orthopedic treatment methods depending on the stage of the disease. Syphilitic lesions of bones and joints. Classification: born, acquired (early, late). Clinical and X-ray symptoms depending on its form. Treatment.

Topic 10. Inflammatory, tumor and tumor -like diseases of the support and movement system.

General questions of the pathogenesis and clinic of bone and joint tuberculosis. Forms of tuberculosis. Tuberculous spondylitis, phases of the course. Clinical and radiological diagnosis. General principles of conservative treatment. Indications for surgical treatment and types of surgical interventions . Tuberculosis of hip and knee joints. Phases of the course of the disease, clinical and radiological symptoms. Indications for conservative and operative treatment.

Classification of tumors. Primary benign tumors of cartilage and bone origin: chondroma, osteoblastoclastoma , osteoma, osteoid - osteoma. Clinical and radiological signs of tumors. Methods of treatment.

Primary malignant tumors of cartilage and bone origin: chondrosarcoma , periosteal fibrosarcoma , osteogenic sarcoma, Ewing 's sarcoma . Clinical and radiological methods of diagnosis of malignant tumors, their treatment. Secondary malignant tumors: metastatic and growing into the bone from the surrounding soft tissues (synovioma). Clinic, treatment.

Tumor -like bone diseases: solitary bone cyst , aneurysmal bone cyst , osteoid osteoma. Clinical and radiological signs. Treatment.

5. STRUCTURE OF THE EDUCATIONAL DISCIPLINE

Names of topics	Number of hours					
	Full-time					
	everything	including				
		l	p	Lab .	Indian _	with. p
1	2	3	4	5	6	7
Traumatology and orthopedics						
Chapter 1. *General issues of traumatology and orthopedics.*						
Topic 1. Introduction to the specialty. Peculiarities of examination of traumatological and orthopedic patients. Modern principles of fracture treatment. Damage to the shoulder girdle.	10	2	5			4
Topic 2. Traumatic dislocations. Damage to ligaments, tendons and muscles.	10	2	5			4
Topic 3. Limb amputation. Rehabilitation and prosthetics of disabled people with limb defects. Traumatological and orthopedic treatment patients in outpatient settings.	8		5			4
Together by chapter 1	28	4	15			12
Section 2. *Damage to the pelvis, spine, bones and joints of the belts of the upper and lower limbs. Traumatic disease*						
Topic 4. Damage to the upper limb. Damage to the spine.	9		5			4
Topic 5. Damage to the pelvis. Damage to the bones and joints of the lower limb. Superimposition of skeletal extraction and AZF.	9		5			4
Topic 6. Traumatic disease. Polytrauma . Syndrome of prolonged crushing .	11	2	5			4

Topic 7. Traumatic shock. Fire injuries of bones and joints.	5		5			
Chapter 3. ***Degenerative -dystrophic, inflammatory and tumor diseases of joints and spine.***						
Topic 8. Degenerative-dystrophic diseases of the spine and joints.	9	2	4			3
Topic 9. Congenital and dysplastic diseases of bones and joints. Scoliosis.	6	2	4			
Topic 10. Inflammatory, tumor and tumor -like diseases of the support and movement system.	9		3			3
Differentiated scoring.			4			
Only hours	90	10	50			30

Topics of lectures

No. z/p	Topic name	Number hours
Traumatology and orthopedics		
1.	Introduction to traumatology and orthopedics. Regeneration of bone tissue.	2
2.	Peculiarities of examination of orthopedic and traumatological patients.	2
3.	Basic principles of fracture treatment	2
4.	Polytrauma . Fire injuries of bones and joints.	2
5.	Congenital and dysplastic diseases of bones and joints.	2
10 in total		

Topics of practical classes

No. z/p	Topic name	Number hours
Traumatology and orthopedics		
Chapter 1. *General issues of traumatology and orthopedics.*		
1	Introduction to the specialty. Peculiarities of examination of traumatological and orthopedic patients. Modern principles of fracture treatment.	5
2	Traumatic dislocations. Damage to ligaments, tendons and muscles.	5
3	Limb amputation. Rehabilitation and prosthetics of disabled people with limb defects. Outpatient treatment of traumatological and orthopedic patients.	5
Chapter 2. *Damage to the pelvis, bones and joints of the upper and lower back belts lower extremities.*		
4	Damage to the upper limb. Damage to the spine	5
5	Damage to the pelvis. Damage to the bones and joints of the lower limb. Superimposition of skeletal extraction and AZF.	5
6	Traumatic disease. Polytrauma . Syndrome of prolonged crushing .	5

7	Traumatic shock. Fire injuries of bones and joints.	5
Chapter 3. *Degenerative -dystrophic, inflammatory and tumor diseases of joints and spine.*		
8	Degenerative - dystrophic diseases of the spine and joints.	4
9	Congenital and dysplastic diseases of bones and joints. Scoliosis.	4
10	Inflammatory, tumor and tumor -like diseases of the support and movement system.	3
	Differentiated scoring	4
In total		**50**

Individual work

No. z/p	**Topic**	**Number of hours**
1	Introduction to the specialty. Peculiarities of examination of traumatological and orthopedic patients. Modern principles of fracture treatment. Damage to the shoulder girdle.	4
2	Traumatic dislocations. Damage to ligaments, tendons and muscles. Damage to the upper limb. Damage to the spine.	4
3	Limb amputation. Rehabilitation and prosthetics of disabled people with limb defects. Outpatient treatment of traumatological and orthopedic patients.	4
4	Damage to the pelvis. Damage to the bones and joints of the lower limb. Superimposition of skeletal extraction and AZF.	4
5	Traumatic disease. Polytrauma . Syndrome of prolonged crushing . Traumatic shock. Fire injuries of bones and joints.	4
6	Degenerative - dystrophic diseases of the spine and joints.	6
7	Congenital and dysplastic diseases of bones and joints. Scoliosis. Inflammatory, tumor and tumor-like diseases of the support and movement system.	4
	Together	30

6. INDIVIDUAL TASKS.

Individual tasks are one of the forms of organization of training, which aims to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice. Individual tasks are performed by students independently under the guidance of the teacher.

Individual tasks include: writing abstracts and creating multimedia presentations with reports at the meetings of the scientific student circle of the department, participation in the prepared participation in the scientific and research work of the department, participation in writing theses and articles of reports at student scientific conferences.

List of tasks for individual student work: Protection of an individual research project ; participation in the work of the student scientific circle and speeches at scientific forums; participation in the student Olympiad in discipline; selection of video and audio materials from sections of the academic discipline; selection of materials and creation of a presentation on a relevant topic or section of the discipline.

7. TEACHING METHODS

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, interactive lecture, conversation;
2. Visual methods: illustration, demonstration, bedside demonstration.
3. Practical methods: performing practical work and solving situational tasks to develop skills and abilities;
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: Case-based learning (Learning through the analysis of a clinical case, situation); brainstorming; educational discussion; educational debate; role play; team-based learning; think-pair-share.

The types of training according to the curriculum are: lectures; practical training; independent work of students.

8. CONTROL METHODS

Current control is carried out on the basis of control theoretical knowledge, practical skills and abilities.

Forms of current control are: **oral survey** (frontal, individual, combined), interview; **practical verification of the formed professional skills** (carried out based on the results of solving clinical cases, working with medical documentation, performing practical skills, working at the patient's bedside); test control ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

The final (summary) control is carried out:

- in the form of a written test, which includes test tasks, theoretical questions
- control of practical skills (solving clinical cases, assessment of correct performance of practical skills - practical-oriented exam.

According to the specifics of professional training, preference is given to test and practically oriented control.

Differential assessment is a form of final control of the student's assimilation of theoretical and practical material from the academic discipline.

9. Scheme of calculation and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

The study of the discipline ends with a final control in the form of a differential assessment.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the differential credit.

The maximum number of points that a student can score for the current educational activity for admission to the exam is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

The minimum number of points that a student must score for the current educational activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 1.

Table 1.

Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking the exam is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points from the discipline for students who have successfully completed the program are converted into the national scale and the ECTS system (Table 2).

Table 2.

Rating scale: national and ECTS

The sum of points for all types of educational activities	Evaluation of ECTS	Evaluation on a national scale	
		for the exam, diff . offset	for credit
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactory with the possibility of refolding	not included with the possibility of refolding
0-49	F	unsatisfactory with mandatory repeated study of the discipline	not enrolled with mandatory repeated study of the discipline

10. METHODOLOGICAL SECURITY

1. Work program of the academic discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

11. RECOMMENDED LITERATURE

A. Main

1. V.D. Shishchuk , A.M. Terekhov , D.V. Shishchuk, Nurein Mohamed , S.A. Curve Arthritis: classification, diagnosis, treatment . Study guide Sumy: LLC "VPP "Print Factory", 2018.104 p.
2. Self-massage ; Types and methods of execution : Tutorial / Shyshchuk VD, Terekhov AN, Nurein MN, Mrita EG- Sumy: LLC "VPP "Print Factory", 2021.-104 p.
3. Bur'yanov O.A., Golka H.G., Klymovytskyi V.G. Traumatology and orthopedics: a textbook for students of higher medical educational institutions. 2019. 430 p.
4. Traumatology and orthopedics: a textbook for students of VMNH 4 level . Accred./edited by H.G. Needles, etc. - Vinnytsia: Nova kniga, 2014. - 416 p. (Approval of the Ministry of Health of Ukraine , protocol No. 3 dated 16.10.2012, meeting of the Committee on Medical Sciences and Methodology of the Council on Education of the Ministry of Education and Culture of Ukraine)
5. Orthopedics and traumatology: a textbook for intern doctors and trainee doctors of postgraduate education institutions/ edited by OHM. Khvysyuka . – Kharkiv: Oberig, 2013. – 656 p.
6. Kolisnyk, P.F. Lectures on clinical vertebrology : a study guide for students of higher educational institutions / P.F. Kolisnyk. - Vinnytsia: Nova Kniga, 2017. - 184 p. (Rec . of the State Institution "CMC of Higher Medical Education of the Ministry of Health of Ukraine ", Proc . Session of the Commission dated 12/16/2016 , No. 4)
7. Polytrauma : surgery , traumatology , anesthesiology , intensive therapy : учебн . manual for intern doctors / Ed . F. S. Glumcher and others . - K.: Medicine, 2012. - 736 p.
8. Oleksa A.P. Orthopedics. Ternopil " Ukrmedknyga ", 2006. 527 p.
9. Sklyarenko E.T. Traumatology and orthopedics. K.- "Health", 2005, 382 p.
10. Apley and Solomon's system of Orthopedics and Trauma/Solomon/ 2017 .
11. Orthopedics and Traumatology: an evidence-based approach/ 2013 .

B. Additional:

1. The syndrome of undifferentiated connective tissue dysplasia : from the concept of pathogenesis to the strategy of treatment: study . study guide . Medical University of the III-IV levels of accreditation, interns, general practitioners - family medicine / O. V. Soleyko , N. A. Rykalo, I. P. Osypenko, L. P. Soleyko . - Vinnytsia: New Book, 2014. - 168 p.

2. Ulis, N. E. Neuroorthopedia : manual / N. E. Ulis. - Kyiv: Medicine, 2014. - 360 p.

3. Practicum on the course of traumatology and orthopedics for students . VMZ / O. M. Yedinak et al. – Ternopil: Ukrmedknyga , 2004. – 144 p.

4. Edinak O.N. Perfect osteosynthesis. Ternopil, 2003

5. V.D. Shishchuk , B. I. Shcherbak, A. M. Terekhov . Theory and practice of equal and gradual rehabilitation of patients with intervertebral osteochondrosis. Training manual Sumy: LLC "VPP "Print Factory", 2016. - 148 p.