MINISTRY OF HEALTHCARE LVIV NATIONAL MEDICAL UNIVERSITY

named after DANYLO HALYTSKY

DEPARTMENT OF TRAUMATOLOGY AND ORTHOPEDICS

" APPROVE"
The first vice-rector
on scientific and pedagogical work
Corresponding Member NAMS
of Ukraine,
prof. MR Grzegotski
_____
«___» _____ 2023

SYLLABUS OF THE COURSE "TRAUMATOLOGY AND ORTHOPEDICS" FOR 5TH YEAR STUDENTS

training of specialists of the second (master's) level of higher education

field of knowledge 22 "Health" specialties 222 "Medicine"

Discussed and approved
at the methodical meeting of the department
traumatology and orthopedics
Protocol №
from " " 2023
Head of Department
_____ prof. Trutyak IR

Approved
profile methodical commission
in surgical disciplines
Protocol №
from " " 2023
Chairman of the profile methodical commission
_____ prof. Andryushchenko VP

LVIV 2023

CONTENT

I. General information	
Name of the faculty	Medical faculty № 1
Educational program (branch, specialty, level of higher education, form of education)	22 Healthcare, 222 Medicine second (master's) level of higher education, full-time
Academic year	2022-2023
Name of discipline, code (e-mail address on the website of LNMU named after Danylo Halytsky)	Traumatology and orthopedics, OK 42 kaf_traumatology@meduniv.lviv.ua
Department (name, address, phone, e-mail)	KNP 8 city clinical hospital,79035, str. Navrotskoho 23, tel: 0322367429 KNP city children's clinical hospital 79000, str. P. Orlika 4, tel: 0322944706 KNP ENT Regional Children's Clinical Hospital OKHMADIT, 79000, str. Lisenka 31, tel: 0322368081 Military Medical Clinical Center of the Western Region, 79000, st. Lychakivska, 26, tel: 0322759500,. Clinical Hospital of the State Border Guard Service of Ukraine, 79000, st. Lychakivska, 107, tel: 032 239 00 29. Institute of Blood Pathology and Transfusion Medicine of the National Academy of Medical Sciences of Ukraine, 79000, vul. Generala Chuprynky, 45, surgery clinic, tel: 0322383244.
Head of the department (contact e-mail)	Professor Tutyak IR ihortrutiak@yahoo.com
Year of study (year in which the study of the discipline)	Fifth year
Semester (semester in which the study of the discipline is implemented)	IX
Type of course / module (compulsory / optional)	Required
Teachers (names, surnames, scientific degrees and titles of teachers who teach the discipline, contact e-mail)	Trutyak Ihor Romanovych - Doctor of Medicine, Professor, Ihortrutiak@yahoo.com Gnateiko Nazar Olegovich - Candidate of Medical Sciences, Associate Professor, nazarik75@gmail.com Kalinovich Nazar Romanovich – assistant
Erasmus yes / no (availability of the discipline for students within the Erasmus program)	No
Person responsible for syllabus (person to be commented on syllabus, contact e-mail)	Gnateiko Nazar Olegovich - Candidate of Medical Sciences, Associate Professor, nazarik75@gmail.com
Number of ECTS credits	3
Number of hours (lectures / practical classes / independent work of students)	Number of hours: total - 90 lectures - 5 practical classes - 40 self work of students – 40
Language of instruction	English
Information about consultations	Consultations are held in accordance with the schedule of consultations approved by the head of the department

Address, telephone and regulations of the clinical base	KNP 8 city clinical hospital,79035, str. Navrotskoho 23, tel: 0322367429 KNP city children's clinical hospital 79000, str. P. Orlika 4, tel: 0322944706 KNP ENT Regional Children's Clinical Hospital OKHMADIT, 79000, str. Lisenka 31, tel: 0322368081 Military Medical Clinical Center of the Western Region, 79000, st. Lychakivska, 26, tel: 0322759500,. Clinical Hospital of the State Border Guard Service of Ukraine, 79000, st. Lychakivska, 107, tel: 032 239 00 29. Institute of Blood Pathology and Transfusion Medicine of the National Academy of Medical Sciences of Ukraine, 79000, vul. Generala Chuprynky, 45, surgery clinic, tel: 0322383244.

2. Short annotation to the discipline

Traumatology and orthopedics is one of the fundamental disciplines in the system of higher medical education, the knowledge of which is necessary for the quality training of health professionals. It is based on the study of medical and biological physics, biological and bioorganic chemistry, human anatomy, physiology, radiology, general surgery (with operative surgery and topographic anatomy) and integrates with surgery, pediatric surgery, oncology, neurosurgery, anesthesiology and anesthesiology. Lays the foundations for the study of family medicine and emergency medicine, which involves the integration of teaching with these disciplines and the formation of skills to apply knowledge of traumatology and orthopedics in the process of further study and professional activities. Forms the foundations of a healthy lifestyle and prevention of dysfunction of the support system and movement in the process of life.

In recent decades, traumatology and orthopedics have been supplemented by new approaches in diagnosis and treatment. In this regard, the standards of higher medical education require a graduate of a higher medical educational institution to be able to timely and in a sufficient manner to carry out diagnostic and therapeutic measures in case of injury. Higher medical education also requires that the clinician must be able to predict the course of periods of traumatic illness, the time of fracture fusion, as well as assess the risk of various long-term consequences of injury.

Knowledge of traumatology and orthopedics allows the future specialist to understand the processes that occur in the human body after injury.

Types of educational activities of students according to the curriculum are lectures, practical classes and independent work.

Systematic assessment of success and enrollment of individual components of the discipline involves the following elements: current performance, independent work and semester credit. The current educational activities of students are monitored in practical classes. The following methods are used to check the level of preparation of students: oral examination, situational tasks, written tasks. During the assessment of mastering each topic for the current educational activity of the student, grades are given on a four-point scale. The student must receive a grade for each lesson.

Students' independent work is assessed during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent extracurricular work is controlled during the final control.

Semester test is a form of final control, which consists in assessing the student's mastery of educational material solely on the basis of the results of his performance of certain types of work in practical classes. Semester credit in disciplines is held after the end of its study, before the examination session.

3. The purpose and objectives of the discipline

1. The purpose of teaching the discipline "Traumatology and Orthopedics" is to form in students a set of knowledge, skills and abilities in traumatology and orthopedics.

1.1 The main objectives of the discipline "Traumatology and Orthopedics": According to the requirements of the educational and professional program, students must:

know:

1. Determining the tactics of management of patients with injuries and the most common orthopedic diseases of the musculoskeletal system.
2. Demonstrate mastery of methods of injury prevention and orthopedic diseases.
3. Diagnose emergencies in injuries of the musculoskeletal system and provide emergency medical care.
4. Explain the principles of rehabilitation and rehabilitation of patients with musculoskeletal disorders.
5. Carry out differential diagnosis of traumatic injuries of the musculoskeletal system, establish a preliminary diagnosis of injuries and the most common orthopedic diseases.

be able:

1. Interpret the concept of "traumatology and orthopedics" and know the features of the diagnosis of injuries or diseases of the musculoskeletal system;
2. Master the principles of classification of typical injuries and orthopedic diseases.
3. Be able to provide emergency medical care to victims with fractures at the pre-hospital stage.
4. Explain the pathogenetic features of the course of traumatic illness in polytrauma.
5. To make schemes of treatment and rehabilitation of victims with fractures and their complications.
6. Master the principles of prevention of injuries and orthopedic diseases.
7. Master the pathogenesis and classification of traumatic shock.
8. Be able to diagnose traumatic shock and provide medical care at the pre-hospital and hospital stages.
9.Determine the tactics of management of patients with injuries and the most common orthopedic diseases of the musculoskeletal system.
10. Demonstrate mastery of methods of injury prevention and orthopedic diseases.
11. Diagnose emergencies with injuries of the musculoskeletal system and provide emergency medical care.
12. Explain the principles of restorative treatment and rehabilitation of patients with musculoskeletal disorders.
13. Carry out differential diagnosis of traumatic injuries of the musculoskeletal system, establish a preliminary diagnosis of injuries and the most common orthopedic diseases.
14. Provide emergency medical care;
15. Maintain medical records;
16. Act socially responsibly and consciously;
17. To act on the basis of ethical considerations (motives);

1. Competences and learning outcomes, the formation of which is facilitated by the study of the discipline.

In accordance with the requirements of the Standard of Higher Education, the discipline provides students with the acquisition of competencies:
- integral: ability to solve complex problems and practical problems in the field of professional activity 22 "Health", which involves the application of certain theoretical knowledge, skills, practical skills and methods of the relevant professional direction;

- general:

1. Ability to abstract thinking, analysis and synthesis;
2. The ability to learn and master modern knowledge;
3. Ability to apply knowledge in practical situations;
4. Knowledge and understanding of the subject area and understanding of professional activity;
5. Ability to adapt and act in a new situation;
6. Ability to make informed decisions;
7. Ability to work in a team;
8. Interpersonal skills;
9. Ability to communicate in the state language both orally and in writing;
10. Ability to communicate in a foreign language;
11. Skills in the use of information and communication technologies;
12. Definiteness and persistence in terms of tasks and responsibilities;
13. Ability to act socially responsibly and consciously;
14. The desire to preserve the environment;
15. Ability to act on the basis of ethical considerations (motives).

- special (professional, subject):

1. Skills of interviewing and clinical examination of the patient;
2. Ability to determine the required list of laboratory and instrumental studies and evaluate their results;
3. Ability to establish a preliminary and clinical diagnosis of the disease;
4. Ability to determine the required mode of work and rest in the treatment of diseases;
5. Ability to determine the nature of nutrition in the treatment of diseases;
6. Ability to determine the principles and nature of treatment of diseases;
7. Ability to diagnose emergencies;
8. Ability to determine the tactics of emergency medical care;
9. Skills in providing emergency medical care;
10. Skills of medical manipulations;
11. Ability to determine the tactics of management of persons subject to dispensary supervision;
12. Ability to keep medical records.

4. Prerequisites of the discipline

The study of the discipline "Traumatology and Orthopedics" is provided in the 5th year in the 9th semester, when the student has acquired relevant knowledge of the basic basic disciplines with which the program of the discipline is integrated.

To successfully learn and master the competencies of this discipline, it is advisable to obtain knowledge in such disciplines as: medical biology, parasitology and genetics, medical physics, biological chemistry, bioorganic chemistry, bioinorganic and physcoloid chemistry, human anatomy, normal physiology, pathological anatomy, pathology , which students receive in parallel with the study of traumatology and orthopedics.

It lays the foundations for the study of propaedeutics of internal medicine with patient care, general surgery with anesthesiology and patient care, propaedeutics of pediatrics with child care, which involves the integration of teaching with these disciplines and the formation of skills to apply knowledge of traumatology and orthopedics in professional activities.

5. Program learning outcomes

List of learning outcomes

Learning outcome code	The content of the learning outcome	Reference to the code of the competence matrix
No – 4-11 Be able – 1,2 K – 1	Collect data on patient complaints, medical history, life history, conduct and evaluate the results of physical examination.	PRS 1
No – 2,4-11 Be able – 2 K – 2	Evaluate information about the diagnosis using a standard procedure based on the results of laboratory and instrumental studies.	PRS 2
No – 4,6 Be able – 2,3 K – 2,3	Highlight the leading clinical symptom or syndrome. Establish the most probable or syndromic diagnosis of the disease. Assign laboratory and / or instrumental examination of the patient. Carry out differential diagnosis of diseases. Establish a preliminary and clinical diagnosis (according to lists 1 and 2)	PRS 3
No – 9-12 Be able – 3 K - 4	Determine the necessary mode of work and rest in the treatment of the disease.	PRS 4
No – 11,12 Be able – 3 K – 5,6	Determine the necessary therapeutic nutrition in the treatment of the disease.	PRS 5
No – 6,8 Be able – 5 K - 6	Determine the principles and nature of treatment (conservative, operative) disease.	PRS 6

No – 12 Be able – 4,11 К – 8,9	Determine the tactics of emergency medical care based on the diagnosis of emergency (according to list 3)	PRS 7
No – 5,6,8 Be able – 11 К - 9	Provide emergency medical care on the basis of an emergency diagnosis (according to list 3)	PRS 8
No– 12,13 Be able – 9,10 К - 7	Organize medical and evacuation measures among the population and servicemen, taking into account the existing system of medical and evacuation support.	PRS 9
No – 5 Be able – 9,11 К - 10	Perform medical manipulations.	PRS 11
No – 14 Be able – 5,6,10 К - 11	To form dispensary groups of patients among the fixed contingent of the population; groups of healthy people subject to dispensary supervision. Implement a system of anti-epidemic and preventive measures within the primary health care. Implement a system of primary prevention measures within the primary health care. Organize secondary and tertiary prevention measures among the assigned contingent of the population.	PRS 12
No – 13,14 Be able – 5,10,12 К – 11	Determine the presence and degree of restrictions on life, type, degree and duration of disability with the execution of relevant documents.	PRS 15
No - 13 Be able – 15 К – 4,11,12	Identify negative environmental factors; analyze the state of health of a certain contingent; determine the relationship between the state of the environment and the state of health of a particular contingent; develop preventive measures based on data on the relationship between the state of the environment and the state of health of a particular contingent. Carry out analysis of morbidity of the population, identifying risk groups, risk areas, time of risk, risk factors. Assess the impact of socio-economic and biological determinants on the health of the individual, family, population.	PRS 18
No – 7,13 Be able Ум – 5,9 К – 7,8,11	Organize the work of medical staff; to form rational medical routes of patients; organize interaction with colleagues, organizations and institutions; apply tools to promote medical services.	PRS 20
No– 13 Be able – 13,14 К – 12	Form goals and determine the structure of personal activities.	PRS 21
No – 5,7 Be able – 13 К – 1,5,6,7	Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.	PRS 22
No– 13,14 Be able – 13,14 К – 11-15	To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general educational and cultural level.	PRS 23
No – 14 Be able – 14 К – 13,14	Adhere to the requirements of ethics, bioethics and deontology in their professional activities.	PRS 24
No – 1-3 Be able – 15 К – 8	Organize the necessary level of individual safety (own and those cared for) in case of typical dangerous situations in the individual field of activity.	PRS 25

6. Format and scope of discipline		
Course format	**Eye**	
Kind of occupations	**Number of hours**	**Number of groups**
Lectures	5	
Practical	40	
Self work	40	

7. Topics and content of the discipline

Code type to borrow	Topic	Learning content	Learning outcome code	Teacher
L- 1	Traumatic desease. Polytrauma Clinic, diagnosis, treatment. Pelvic injury. Clinic, diagnosis, treatment.	Master basic knowledge about the etiology and pathogenesis of traumatic disease, the field of injury. Classification of pelvic ring injuries. Modern principles of treatment of pelvic fractures.	No – 1-3,7 Be able – 1,15 К – 2,4	Teaching staff in accordance with the schedule approved by the head of the department
L - 2	Introduction to traumatology and orthopedics. Bone regeneration. Closed and open fractures. Modern methods of fracture treatment	Master the basic knowledge of Transport Immobilization. Features of treatment of multiple, combined and combined injuries of the support and movement system. Transport immobilization. Basic principles. Devices for transport immobilization. Definition of "fracture". Classification of fractures, clinic, diagnosis, treatment. Complications that occur in the treatment of fractures: delayed fusion, false joints, improper fusion. The causes of these complications, their prevention and treatment.	No – 4,6,7,8 Be able – 2,3,5 К – 1,2,3	Teaching staff in accordance with the schedule approved by the head of the department

L - 3	Spinal cord injury. Clinic, diagnosis, treatment. Open fractures, features of treatment. Traumatic osteomyelitis	Master basic knowledge about spinal injuries, mechanogenesis, clinic, diagnosis. Treatment. Features of modern approaches to the treatment of open fractures, classification. Methodology of treatment of post-traumatic osteomyelitis.	No – 13,14 Be able – 10,13,14 K – 11,12	Teaching staff in accordance with the schedule approved by the head of the department
L-4	Osteochondrosis of the spine. Clinic, diagnosis, treatment. Osteoarthritis. Clinic, diagnosis, treatment. Rehabilitation for diseases and injuries of the musculoskeletal system	Master basic knowledge of clinical manifestations of osteochondrosis and osteoarthritis, modern methods of diagnosis and treatment of degenerative - dystrophic diseases of the spine and joints.		Teaching staff in accordance with the schedule approved by the head of the department
L-5	Inflammatory, tumorous and tumorous diseases of the musculoskeletal system. Clinic, diagnosis, treatment. Scoliosis. Deformation of the neck, chest. Clinic, diagnosis, treatment.	Master basic knowledge about tumor and tumor-like diseases of the musculoskeletal system. Diagnosis, clinic, treatment of orthopedic deformities of the neck, chest, scoliotic deformity of the spine.		Teaching staff in accordance with the schedule approved by the head of the department
P – 1	Introduction to the specialty. Features of examination of traumatological and orthopedic patients. Damage to ligaments, tendons and muscles. Traumatic dislocations	Master the basic knowledge of defining traumatology and orthopedics as a discipline. History of development and modern achievements of domestic traumatology and orthopedics. Features of history taking in patients with pathology of the musculoskeletal	No – 1,2 Be able – 1,15 K – 2,3	Teaching staff in accordance with the schedule approved by the head of the department

		system. The main types of deformities of the extremities and spine. Types of limb shortening and methods of their determination. Methods for determining the volume of movement in the joints. See contracture. Absolute and relative clinical signs of fractures, dislocations. Probable and relative signs of diseases of the joints and spine. Radiological signs of fractures, dislocations and orthopedic diseases. Definition of "dislocation", "subluxation". Pathomorphology of dislocation. General classification of dislocations. Providing medical care at the pre-hospital stage. Treatment of dislocations in a specialized hospital. Complications of dislocations, their prevention and treatment.		
P – 2	Traumatic decise. Traumatic shock. Polytrauma. Modern principles of fracture treatment.	Master the basic knowledge about the pathogenesis of traumatic illness, the periods of its course. Use of modern scales for scoring the severity of the injured. Diagnosis, prognosis and treatment of traumatic illness. Classification and algorithms based on its diagnosis and treatment of polytrauma.	No – 5,7 Be able – 2,3 K – 3	Teaching staff in accordance with the schedule approved by the head of the department

		Emergency care for victims of polytrauma. Transport immobilization. Features of treatment of multiple, combined and combined injuries of the support and movement system. Transport immobilization. Basic principles. Devices for transport immobilization. Definition of "fracture". Classification of fractures, clinic, diagnosis, treatment. Complications that occur in the treatment of fractures: delayed fusion, false joints, improper fusion. The causes of these complications, their prevention and treatment.		
P – 3	Limb amputations. Rehabilitation and prosthetics for the disabled with limb defects. Treatment of traumatological and orthopedic patients in an outpatient setting.	Master the basic knowledge of indications for limb amputation. Methods and methods of limb amputation. Features of treatment of patients with defects of extremities The purpose and objectives of prosthetics. Indications and contraindications to prosthetics. Types of limb prostheses - cosmetic, active-cosmetic. Orthopedic devices, their purpose, device. Indications for use orthopedic devices. Orthopedic shoes. Indications for the appointment of	No – 5,8,9,11 Be able – 2 K – 1-3	Teaching staff in accordance with the schedule approved by the head of the department

		orthopedic shoes. Principles of organization of outpatient care for patients with injuries and orthopedic diseases.		
П – 4	Damage to the bones and joints of the upper limb girdle. Injuries and damage to blood vessels and nerves	Master the basic knowledge of scapular damage. Classification, diagnosis, treatment. Dislocations and fractures of the clavicle. Diagnosis, conservative and operative treatment. Mechanogenesis of fractures of the proximal humerus. Classification, diagnosis, treatment. Fractures of the diaphysis of the humerus. Mechanogenesis of injury, diagnosis, treatment. Fractures of the distal end of the humerus. Mechanogenesis of injury, classification, diagnosis, treatment. Fractures of the ulnar process. Mechanogenesis of injury, clinic, diagnosis, treatment. Fractures of the radial bone head. Classification, mechanism of injury. Clinic, diagnosis, treatment. Fractures of the diaphyses of the forearm bones. Classification, mechanism of damage. Features of fragment displacement. Clinic, diagnosis. Indications for conservative and operative methods of treatment. Fractures of the distal end of	No – 6 Be able – 1,2 К – 3,4	Teaching staff in accordance with the schedule approved by the head of the department

		the radial bone and their types. Mechanogenesis of damage. Clinic, diagnosis, treatment Fractures of the bones of the hand. Fractures of the wrist and metacarpal bones. Typical mechanisms of injury. Clinic, diagnosis, treatment. Damage to the tendons of the fingers. Clinic, diagnosis, treatment. Classification of bleeding in injuries and damage to blood vessels. Clinic of acute blood loss. Ways to temporarily stop bleeding on the battlefield and stages of medical evacuation. Clinic and treatment of nerve damage.		
P – 5	Spinal cord and pelvic injuries.	Master the basic knowledge on the classification of spinal injuries, their mechanogenesis, pathomorphology. The concepts of "stable" and "unstable" spinal injuries. Clinical manifestations of complicated and uncomplicated injuries depending on their location. Providing medical care at the prehospital 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 technique. Social	No – 4,6,13,14 Be able – 2 K – 3,4,11	Teaching staff in accordance with the schedule approved by the head of the department

		and professional rehabilitation of patients with spinal injuries. Classification of pelvic injuries and mechanogenesis of various variants of their formation. Clinical picture with various pelvic injuries. Clinical features of complicated pelvic injuries and their diagnosis. Principles of providing medical care to patients at the prehospital stage. conservative and operative methods of treatment of patients with various types of pelvic injuries.		
P – 6	Damage to the bones and joints of the lower extremity.	Master the basic knowledge of the classification of fractures of the proximal thigh. Mechanism of damage. Clinic, diagnostics. Providing medical care at the prehospital stage. Features of reparative regeneration of fractures of the proximal thigh. Methods of treatment, their indications and features depending on the location of fractures and their types. Fractures of the femoral shaft. Mechanism of injury, clinic, diagnosis. Features displacement of fragments depending on the location of the fracture. Indications for conservative and surgical treatment.	No – 8,10,11 Be able – 8 K – 11	Teaching staff in accordance with the schedule approved by the head of the department

		Fractures of the condyles of the femur. Classification, mechanism of injury. Clinic, diagnosis. The main principles of treatment. Indications for operative and conservative methods of treatment. Fractures of the patella. Clinic, diagnosis. Methods of treatment depending on the type of fracture. Knee ligament damage. Mechanism of injury, clinic, diagnosis. Methods of their conservative and operative treatment. Damage to the menisci. Mechanism of injury, clinic, diagnosis, treatment. Damage to the soft tissues of the lower leg (muscles, heel tendon, small tibial and tibial nerves, blood vessels). Clinic, diagnosis and treatment. Fractures of the tibia. Classification. Damage mechanism, clinic, diagnosis. Conservative and operative methods of treatment of shin bone fractures, indications for them. Shin bone fractures. Classification, mechanism of injury, diagnosis. Conservative and operative treatment. Closed reposition technique for typical bone fractures. Fractures of the calcaneus and heel bones. The		

		mechanism of their damage. Clinic, diagnosis, treatment. Fractures of the metatarsals and phalanges of the fingers. Clinic, diagnosis, treatment. Features of treatment of fractures of foot bones.		
P – 7	Degenerative - dystrophic diseases of the spine and joints.	Master basic knowledge about the pathogenesis of osteochondrosis of the spine. Biomechanics and physiology of the intervertebral segment. Stages of osteochondrosis. Clinic, diagnosis of osteochondrosis of the spine of different localization. Indications for conservative and operative methods of treatment. Etiology, pathogenesis of spondylosis and spondyloarthritis. Clinic, diagnosis. Principles of treatment of spondylosis and spondyloarthritis. Professional rehabilitation of patients with degenerative-dystrophic diseases of the spine. Etiology and pathogenesis of deforming arthrosis. Classification and clinic of arthrosis. Diagnosis. Principles of treatment of deforming arthrosis depending on the stage of the disease. Indications for conservative and surgical treatment of	No– 12,14 Be able – 10,13,14 K – 11	Teaching staff in accordance with the schedule approved by the head of the department

		osteoarthritis of the hip, knee and ankle joints.		
P-8	Congenital deformities of the spine, bones and joints. Scoliosis.	Master the basic knowledge of congenital muscular curvature of the neck, Klippel-Feyl disease, Grizzly disease. Congenital high standing of the scapula, pterygoid 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 detection of scoliosis. Prevention, conservative and operative methods of treatment. Posture defects and their types. Etiology. Principles of treatment. Congenital dislocation of the thigh. Etiology, pathogenesis. Clinical and radiological diagnosis of congenital hip dislocation under 1 year of age. 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.	No – 8,10,11 Be able – 8 K – 11	Teaching staff in accordance with the schedule approved by the head of the department

		Clinical and anatomical forms of syndactyly and polydactyly. Treatment.		
P-9	Inflammatory, tumorous and tumor-like diseases of the musculoskeletal system.	Master basic knowledge about rheumatoid arthritis. Etiology, pathogenesis, clinic. Principles of complex treatment: medical, orthopedic. The choice of methods of orthopedic treatment depending on the stage of the disease. Syphilitic lesions of bones and joints. Classification: congenital, acquired (early, late). Clinical and radiological symptoms depending on its form. Treatment. General issues of pathogenesis and clinic of osteoarticular tuberculosis. Forms of tuberculosis. Tuberculous spondylitis, phases. Clinical and radiological diagnosis. General principles of conservative treatment. Indications for surgical treatment and types of surgical interventions. Tuberculosis of the hip and knee joints. Phases of the disease, clinical and radiological symptoms. Indications for conservative and surgical treatment. Classification of tumors. Primary benign tumors of cartilage and bone origin: chondroma,	No – 12,14 Be able – 10,13,14 K – 11	Teaching staff in accordance with the schedule approved by the head of the department

		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 malignancies: 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.		
P-10	Basic principles of osteosynthesis.	Master the basic knowledge of the basic principles of fracture treatment. In our country, about 2 million adults and more than 300,000 children are injured annually. The introduction of world standards, classifications and relevant diagnostic and surgical technologies, as well as the provision of highly specialized trauma care provide special training for orthopedic traumatologists and operating nurses to perform	No – 6 Be able – 1,2 K – 3,4	Teaching staff in accordance with the schedule approved by the head of the department

		osteosynthesis at the current level.		
SWS - 1	Open joint damage.	Master the basic knowledge of providing specialized hospital care to patients with open fractures. Techniques of slanted and non-focal metal osteosynthesis.	No – 2,5,7 Be able – 1 K – 2,3,4	
SWS – 2	Complications of fractures and joint injuries.	To master the basic knowledge about damage to the musculoskeletal system, up to 25% are open fractures, which in more than 64% of cases are accompanied by complications that lead to limited life of the victims and the establishment of disability.	No – 9,10 Be able – 1,2,10, K – 2,3,4	
SWS – 3	Prolonged compression syndrome	Master basic knowledge about the causes of long-term compression 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 actions and natural disasters. Features of treatment of open and closed soft tissue injuries with fracture and without bone fracture.	No – 9 Be able – 1,2 K – 1,2,7	
SWS – 4	Osteopenia and osteoporosis	Master the basic principles of detection and diagnosis,	No – 6,10,11 Be able – 2,3 K – 3	

		anamnestic data, laboratory diagnostics. Instrumental diagnostics. Basic principles of treatment of osteopenia and osteoporosis.		
SWS – 5	Inflammatory diseases of bones and joints	Master basic knowledge about rheumatoid arthritis. Etiology, pathogenesis, clinic. Principles of complex treatment: medical, orthopedic. The choice of orthopedic methods depending on the stage of the disease. Syphilitic lesions of bones and joints. Classification: congenital and acquired (early, late) Clinical and radiological symptoms depending on its form. Treatment. General questions of pathogenesis and clinic of bone and joint tuberculosis. Forms of tuberculosis. Tuberculous spondylitis, phases. Clinical - radiological diagnosis. General principles of conservative treatment. Indications for surgical treatment and types of surgical interventions. Tuberculosis of the hip and knee joints. Phases of the disease, clinical and radiological symptoms. Indications for conservative and surgical treatment.	No – 6,10 Be able – 3,4 K – 2,3,4	

1) Test control of knowledge.
2) Situational tasks.
3) Oral interview and discussion of the topic.
4) Multimedia presentations.
5) Video materials, consideration of case histories of thematic patients.

8. Verification of learning outcomes

Current control

Learning outcome code	Code type to borrow	Method of verifying learning outcomes	Enrollment criteria
No – 1-14 Be able – 1-15 K – 1-12	L – 1-3 P – 1-7 SWS – 1-12	Types of educational activities of students according to the curriculum are: a) lectures; b) practical classes; c) independent work of students (VTS) The lecture course consists of 3 lectures. The topics of the lecture course reveal the problematic issues of the relevant sections of radiation medicine. During lectures, students develop theoretical basic knowledge, provide a motivational component and a general-oriented stage of mastering scientific knowledge during independent work of students. In the lecture course various didactic means are used as much as possible. Lectures - presentation of the material necessary for the student to understand the subject in preparation for practical classes. Practical classes are clinical, aimed at controlling the assimilation of theoretical material and the formation of practical skills, as well as the ability to analyze and apply the acquired knowledge to solve situational problems, are conducted on the clinical bases of the department. Each lesson begins with a test to assess the initial level of knowledge and determine the degree of readiness of students for the lesson. The next stage of the lesson is the practical work of the student in the classroom. The control is carried out by assessing the student's performance of practical skills, the ability to solve typical situational	Knowledge assessment: **Excellent ("5")** - The student correctly answered 90-100% of the tests of format A. Correctly, clearly and logically and fully answers all standardized questions of the current topic, including questions of the lecture course and independent work. Closely connects theory with practice and correctly demonstrates the implementation (knowledge) of practical skills. Solves situational problems of increased complexity, is able to summarize the material. Performed the planned individual work. **Good ("4")** - The student correctly answered 70-89% of the A format tests. Correctly, and essentially answers the standardized questions of the current topic, lecture course and independent work. Demonstrates performance (knowledge) of practical skills. Correctly uses theoretical knowledge in solving practical problems. Is able to solve easy and medium situational problems. Has the necessary practical skills and techniques to perform them in excess of the required minimum. **Satisfactory ("3")** - The student correctly answered 50-69% of the tests of

		problems. At the final stage for assessment of the student's mastery of the topic he is asked to answer situational tasks. The duration of one practical lesson on the topic and taking into account the standards of the weekly classroom workload is 2.0 academic hours.	format A. Incomplete, with the help of additional questions, answers the standardized questions of the current topic, lecture course and independent work. He cannot build a clear, logical answer on his own. During the answer and demonstration of practical skills the student makes mistakes. The student solves only the easiest problems. **Unsatisfactory ("2")** - The student answered less than 50% of the tests of format A. Does not know the material of the current topic, can not build a logical answer, does not answer additional questions, does not understand the content of the material. During the answer and demonstration of practical skills, he makes significant, gross mistakes.
Final control			
General evaluation system		Participation in the work during the semester / semester credit - 60% / 40% on a 200-point scale	
Rating scales		traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Conditions of admission to the final control		The student attended all practical classes and received at least 120 points for current performance	
Type of final control		Methods of final control	Enrollment criteria
Semester test		All topics submitted for current control must be included. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria, rules and procedures for evaluating the results of students' learning activities"	The maximum number of points is 200. The minimum number of points is 120.
Criteria for assessing the semester credit			

Semester test	The form of final control is standardized, includes control of theoretical and practical training and is conducted at the last lesson based on learning outcomes. The current control is carried out during the training sessions and aims to verify the assimilation of educational material by students. At each practical lesson, the student's knowledge is assessed by a four-point system "5". The control of solving situational problems is carried out in a practical lesson by assessing the quality and completeness of their implementation, the ability to interpret the results. For the practical part of the lesson the student can type: 4 points, if the work is done in full and the student freely and correctly explains the situational task and gives an assessment; 2 points, if the work is done with some errors, the student can not fully explain the situational task and give an assessment; 0 points if the work is not completed or the student canna за 4-xot explain the situational task and give an assessment. The final grade for the lesson is determined by the sum of the results of test control and practical work as follows: **Sum of points Score for 4 point scale** **from 22 to 26 - 5** **from 17 to 21 - 4** **from 11 to 16 - 3** <9 points for the test control Or 0 points for practical part 2 Forms of assessment of current educational activities are standardized and include control of theoretical and practical training. The maximum number of points that a student can score for the current academic activity in the discipline is 200 points. The minimum number of points that a student must score for the current academic activity in the discipline is 120 points. **Sum of Scores point scale** **from 22 to 26 - 5** **from 17 to 21 - 4** **from 11 to 16 - 3**	The grade for the discipline, which ends with a semester credit, is defined as the sum of points for the current academic activity (not less than 120 points). Discipline scores for students who have successfully completed the program are converted into a traditional 4-point scale according to absolute criteria: **From 170 to 200 points - excellent;** **From 140 to 169 points - good;** **From 139 points to the minimum number of points that a student must score - satisfactory;** **Below the minimum number of points that a student must score (<50) – unsatisfactory.**

	<9 points for the test control Or 0 points for practical part 2 Forms of assessment of current educational activities are standardized and include control of theoretical and practical training. The maximum number of points that a student can score for the current academic activity in the discipline is 200 points. The minimum number of points that a student must score for the current academic activity in the discipline is 120 points.	

The calculation of the number of points is based on the grades obtained by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$X = (CA*200)/5$$

9. Discipline policy

The policy of the discipline is determined by the system of requirements for the student in the study of the discipline "Traumatology and Orthopedics" and is based on the principles of academic integrity.

Students are explained the value of acquiring new knowledge, academic standards that must be followed, why they are important, what is academic integrity, what are its values and functions, how students can contribute to its development by their actions; the essence, features and reasons of inadmissibility of academic plagiarism are explained, students of higher education are encouraged to independently carry out educational tasks, to refer correctly to sources of information in case of borrowing of ideas, statements, information.
The policy of the discipline is:

in the obligatory observance of academic integrity by students, namely:
- independent performance of all types of work, tasks, forms of control provided by the worker
the program of this discipline;
- links to sources of information in the case of the use of ideas, developments, statements, information;
- observance of norms of the legislation on copyright and intermediate rights;
- providing reliable information about the results of their own educational (scientific) activities,
used research methods and sources of information.
adherence to the principles and norms of ethics and deontology by higher education students:
- actions in professional and educational situations from the standpoint of academic integrity and
professional ethics and deontology;
- compliance with the rules of internal regulations of the clinical base of the department, to be tolerant,
friendly and balanced in communication with students and teachers, patients,
medical staff of health care institutions;
- awareness of the importance of examples of human behavior in accordance with academic norms
integrity and medical ethics.
attending classes by higher education students:
- Attendance at all classes is mandatory for the purpose of current and final assessment
knowledge (except for good reasons).
rearranging topics and working off missed classes by higher education students:
- practice of missed classes is according to the schedule of practice
- rearrangement of the topic of the lesson, for which the student received a negative grade, is conducted
in convenient time for teachers and students outside of classes, maximum grade - "good"; rearrangement
of the topic during the current training and final control in order to improve
evaluation is not allowed

10. literature

Required

1. Ортопедія і травматологія / За ред. проф. О.М.Хвисюка. – Х., 2013. 656 с.
2. Травматологія та ортопедія: підручник для студентів вищих медичних навчальних закладів / за ред. Голки Г.Г., Бур'янова О.А., Климовицького В.Г.- Вінниця: Нова Книга, (Укр.) 2014. – 416 с.
3. Травматология и ортопедия: учебник для студентов высших медицинских учебных заведений / под ред. Голки Г.Г., Бурьянова А.А., Климовицкого В.Г.- Винница: Нова Книга, (Рос.) 2016. – 448с.
4. Traumatology and orthopedics: підручник для студентів вищих медичних навчальних закладів / за ред. Голки Г.Г., Бур'янова О.А., Климовицького В.Г.- Вінниця: Нова Книга, (Англ.) 2018. – 400 с.
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6. Методичні вказівки з написання навчальної історії хвороби при курації пацієнтів з пошкодженнями і захворюваннями ОРА. / М.С. Клепач, М.І. Пустовойт, В.П. Омельчук та ін.. – Методичні вказівки – Івано-Франківськ 2002 40с.
7. Олекса А.П. Травматологія та ортопедія. – К..Вища школа 1993 – 511с.
8. Скляренко В.Ф. Травматологія і ортопедія. – К..Здоров'я 2005 – 328с.
9. Трубников В.Ф. Заболевания и повреждения ОРА. – К..Здоровье, 1984 – 328с.
10. Трубников В.Ф. Травматология и ортопедия. – К..Виша школа 1976. – 591с.
11. Venger V.F., Serdyuk V.V., Rashed Mochamad. Traumatology and orthopedics. – Odessa: Druk. 2006 – 248p.

Optional

1. Анкин Л.Н., Анкин М.Л. Практика остеосинтеза и єндопротезирования. Киев. 1994. – 304 с.
2. Бабоша В.А., Климовицкий В.Г., Пастернак В.Н. и др.. Травма таза(Клиника, диагностика и лечение). Донецк: Донеччина, 2000. – 176 с.
3. Шумада И.Ф., Суслова О.Я., Стенула В.И., Мороз Н.Ф., Красюк А.П. Диагностика и лечение дегенеративно – дистрофических поражений суставов. К.. Здоров'я, 1990. – 200с.
4. Ипатов А.В., Сергиенко Е.В., Маруни В.В. Методика составления индивидуальной программи медицинской реабилитации инвалидов, управление процесом ее реализации и контроля: Учебно – методическое пособие: Дніпропетровськ: Пороги, 2003. – 105 с.
5. Книш П.Т., Королеі В.И., Толстопятов Б.А. Опухоли из хрящевой ткани. – Киев: Здоров'я, 1986. – 200 с.
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7. Корж М.О., Дедух Н.В. Жупанець І.А. (Ред..) Остеоартроз. Консервативна Терапія. Харків: Прапор. 1999. – 336 с.
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9. Осеопороз: єпидемиология, клиника, діагностика, профілактика и лечение / под.. ред.. Коржа Н.А., В.В.Поворознюка., Н.В. Дедух., И.А. Зупанца. – Х.: Золотие страници. 2002 – 648 с.
10. Стан та перспективи розвитку ортопедо – травматологічної допомоги в Україні / під пед.. Гайко Г.В. – Київ. 2001 – 184 с.
11. Типова програма реабілітації інвалідів з наслідками травм верхніх кінцівок: Методичні рекомендації / Корж М.О., Яремко Д.О., Шевченко О.Г. та ін.. – Харків. 2001. – 23 с.
12. Трубников В.Ф., Истомин Г.П. Первая врачебная помощь пострадавшим при дорожно – транспортних происшествиях. Харьков: Основа. 1991. – 128 с.
13. Фищенко В.Я. Сколиоз. – Макіївка: Полі Прес. – 2005. – 568 с.
14. Muller V., Allgjver v., Schneider R., Willenger H. Manual of Internal Fixation. – Springer Verlag. 1992. – 752p.
15. Критерії, правила і процедури оцінювання результатів навчальної діяльності студентів. Зіменковський Б.С., Гжегоцький М.Р. та ін. – Львів. 2018. – 66 с.

Information resources:
When studying the discipline, through the use of local and global computer networks, students use the following information resources and knowledge bases:
1. Ministry of Health - http://www.moz.gov.ua/ua/portal/
2. Wikipedia - http://uk.wikipedia.org
3. UpToDate - http://www.uptodate.com/home
4. Access Medicine - http://accessmedicine.mhmedical.com
5. PubMed - https://www.ncbi.nlm.nih.gov/pmc/

Electronic versions of educational and methodical support:
Methodical recommendations for practical classes and independent work in traumatology and orthopedics for 5th year medical students in the specialty: 222 - "medicine", field of knowledge 22 "Health" are posted on the distance learning service MISA and are freely available to students.
Access method: http://misa.meduniv.lviv.ua/course/index.php?categoryid=635

11. Equipment, logistics and software discipline

Methodical support of the lecture course:
1. Abstracts of lectures.
2. Methodical development of lectures.
3. Lecture presentations.
4. Educational videos on the subject of the lecture.

Methodical support of practical classes:
1. Methodical development of practical classes for teachers.
2. Methodical instructions for practical classes for students.
3. Variants of test tasks to check the initial level of knowledge on each topic.
4. Variants of situational tasks to check the mastery of topics.

5. Variants of tasks (theoretical and practical) for final control.

Logistics:

1. Multimedia projector.

12. Additional Information

Department page

http://new.meduniv.lviv.ua/kafedry/kafedra-travmatologiyi-i-ortopediyi/

Syllabus stacker
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Candidate of Medical Sciences,
Associate Professor

(Signature)

Head of Department
Trutyak I. R.,
doctor of medical sciences,
professor

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