

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY STATE UNIVERSITY

Academic and Research Medical Institute

Кафедра хірургії, травматології, ортопедії та фтизіатрії

TRAUMATOLOGY AND ORTHOPEDICS

Higher education level	The Second
Major: study programme	222 Medicine: Medicine

Approved by Quality Council

Protocol dated _____ № _____

Chairman of the Quality Council

Petrashenko Viktoriia
Oleksandrivna

DATA ON REVIEWS AND APPROVAL

Author

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Review of the course descriptor	<hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/>
Considered and approved at the meeting of the work group of Study programme Медицина	Protocol dated _____ № _____ Head of the work group (Head of the Study programme) _____ Prystupa Liudmyla Nykodymivna
Considered and approved at the meeting of the Кафедра хірургії, травматології, ортопедії та фтизіатрії	Protocol dated _____ № _____ Head of the Department _____ Duzhyi Ihor Dmytrovych

SYLLABUS

1. General information on the course

Full course name	Traumatology and Orthopedics
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра хірургії, травматології, ортопедії та фізіотерапії
Author(s)	Terekhov Andrii Mykhailovych, Duzhyi Ihor Dmytrovych
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	2 weeks for 9-10 semester
Workload	The volume of the course is 3.0 ECTS credits, 90 hours, of which 50 hours is work with the teacher (40 hours of practical seminars and 10 hours of lectures), 40 hours is independent work.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	Orthopedics and traumatology play an important role in the process of preparing students in medical schools. Knowledge of the musculoskeletal system with the organs and systems of the whole organism, the assimilation of orthopedic symptoms in general pathology allows to form the basis of Clinical features thinking in future doctors. The subject is taught on the basis of recognition, treatment and prevention of injuries, congenital and acquired deformities, injuries and their conse
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The purpose of the course - to teach students to master the ethical and deontological foundations of the profession of orthopedist - traumatologist, to study the main diseases and injuries of the musculoskeletal system in people of different ages and genders, as well as the spread of nosological forms, etiology, pathogenesis, Clinical features signs, modern methods diagnosis and treatment of

trauma patients.

4. Contents

<p>Topic 1 History of Orthopedics and Traumatology. Modern achievements of orthopedics and traumatology. Principles and modern methods of treatment of fractures. Traumatic dislocations.</p> <p>History of orthopedics and traumatology. Modern achievements of orthopedics and traumatology. Ukrainian orthopedic schools. Principles and modern methods of treatment of fractures. Errors in the treatment of fractures. Long-term nonunion of long bones, false joints. Traumatic dislocations. Classification, mechanism of injury. Clinical and radiological diagnosis. Basic principles of treatment</p>
<p>Topic 2 Congenital deformities of the musculoskeletal system. Congenital hip dislocations.</p> <p>Congenital deformities of the musculoskeletal system, scoliotic disease. Etiopathogenesis, pathological anatomy of scoliotic disease. Comprehensive treatment. Congenital hip dislocations . Hip dysplasia. Congenital cervical deformity. Etiopathogenesis, severity, clinical and radiological diagnosis..</p>
<p>Topic 3 Injuries to the shoulder, elbow joint, forearm. Hip joint and knee joint</p> <p>Injuries to the shoulder, elbow joint and forearm. Classification of fractures, principles treatment. Injuries to the hip, knee joint, the mechanism of injuries. Clinical and radiological diagnosis. Principles of treatment.</p>
<p>Topic 4 Injury to the leg, ankle joint, foot. Osteochondrosis.</p> <p>Tibia and fibular fractures. Injury to the soft tissues of the leg and Achilles tendon, tibial and fibular nerves. Clinical diagnostic and methods of treatment. Isolated diaphyseal fractures of the tibia - the mechanism of injury, diagnosis. First aid treatment. Fractures of both tibia and fibular - clinical features and diagnostic. Conservative and operative methods of treatment. Osteochondrosis. Clinical and radiological diagnosis. Principles of treatment. Osteoarthritis.</p>
<p>Topic 5 Polytrauma. Therapeutic tactics. Gunshot wounds of the musculoskeletal system.</p> <p>Polytrauma. Therapeutic tactics. Clinical groups of multiple and combined injuries. Thermal injury. Traumatic brain injury. Gunshot wounds of the musculoskeletal system systems..</p>
<p>Topic 6 Methods of diagnosis of orthopedic-traumatological patient.</p> <p>Methods of diagnosis of orthopedic-traumatological patient. The scheme of writing patient history in orthopedic and traumatological. Clinical Methods of examination of the patient: complaints (on at the time of examination and at the time of injury), history (mechanisms) of the disease or injury to the musculoskeletal system. Life history. Somatic status. Review, palpation, measurement of the musculoskeletal system, reviewing the main symptoms. Determining the length of the segments and the entire limb, determining the circumference of the segments, Determine range of movements of the large joints. Static and gait. Additional diagnostic methods.</p>

Topic 7 Reparative bone regeneration. Modern principles of treatment fractures.

Reparative bone regeneration. Modern principles of treatment of fractures. The mechanism of occurrence of typical types of fractures. Classification of fractures. Diagnosis of fractures of the extremities, chest, spine and pelvis. Providing the first medical aid for injury patient. General process of reparative regeneration. Basic principles of treatment. Fixation, extension, operative and compression-distraction treatments. Indications for treatment in outpatient and inpatient. The concept of fracture healing, restoration limb function and recovery.

Topic 8 Traumatic dislocations.

Traumatic dislocations. Classification of dislocations, the mechanism of injury, pathomorphological changes in the joint and surrounding tissues during dislocation, possible complications. Clinical features and radiological diagnostics. Basic principles of treatment. Pre-hospital care for joint dislocations.

Topic 9 Chest and upper arm injuries

Chest and upper arm injuries. The mechanism of Chest injury. Types bias. Complications of chest injury - trauma to the mediastinum. Clinical and diagnostics. Treatment of Chest injury. Treatment of bruises and ruptures of the heart. Isolated rib fractures, multiple and executive (sash). Mechanism, Diagnosis and treatment. Complicated fractures of the ribs - damage to the pleura and lungs in chest injury. Pneumothorax in closed chest trauma - valvular and closed. Hemothorax. The mechanism of external respiration disorder. Pleuropulmonary shock. Giving first aid. Principles of treatment

Topic 10 Shoulder injury

Humerus fracture. Damage to the soft tissues of the arm - muscles, tendons, nerves. Clinical diagnosis and treatment. Classification of injury to the proximal metaepiphysis. The mechanism of fractures. Diagnosis, treatment. Fractures of the humerus shaft Diagnosis and treatment. Intra-articular fractures of the distal humerus - classification, diagnosis and treatment. Elbow fractures appendix - mechanism and classification of fracture, diagnosis, indications and methods conservative and operative treatment. Fractures of the olecranon process - diagnosis and treatment. Fractures of the radial head and neck - the mechanism injuries, clinical features diagnosis and treatment..

Topic 11 Injury of the forearm.

Injury of the forearm. Fractures of the diaphyses of the radius - features displacement, Diagnosis and treatment. Isolated fracture of the radial shaft. Fracture of the ulna with dislocation of the radius head (Montague fracture), fracture radius and dislocation of the distal radialulnar joint (Galiazze fracture) - flexion and extension type of fracture, diagnosis and treatment methods. Distal Radius fractures in a typical place (Colles fracture and Smith fracture) - fracture mechanism, diagnosis and treatment

Topic 12 Injuries to the wrist and hand.

Injuries to the wrist and hand. Wrist fracture (boat-shaped, crescent-shaped). Clinical, conservative and operative methods of treatment. Damage to the radial wrist ligament. Hygroma of the wrist joints. Damage to the tendons of the flexors and extensors of the fingers. Diagnosis. Conservative treatment. Damage to the extensors of the fingers. Principles of surgical treatment tendon damage within the bone. Tendon sutures. Tactics while simultaneous damage to the tendons of the superficial and deep flexors within the finger. Fractures metacarpal bones and phalanges of the fingers – diagnosis and treatment, Bennett's fracture -diagnosis and treatment. Dislocation of the metacarpal bones and phalanges of the fingers.

Topic 13 Femoral Fracture

Classification of Injury to the proximal femur. Medial fractures of the femoral neck. Clinically diagnosis of fractures of the proximal femur. Providing the first aid. Modern methods of treatment (conservative and operative). Cervical hip fracture - mechanism of injury, diagnosis, conservative and operative methods of treatment. Diaphyseal femoral fractures - features displacement in the upper, middle and lower thirds of the femur. Clinical diagnosis and treatment.

Topic 14 Injury of the knee joint.

Injury of the knee joint. Contusion and hemarthrosis. Clinical diagnostic and Treatment. Damage to lateral and cruciate ligaments, their clinical diagnosis and modern methods of treatment. Injury to the menisci of the knee joint, diagnosis and treatment. Goff's disease. Rupture of the tendon of the rectus femoris and its ligament . Patella fracture - fracture classification and mechanism of injury, clinical picture, diagnosis, methods conservative and operative treatment. Intra-articular fractures are condyles fracture of the femur and proximal tibia and their treatment.

Topic 15 Tibia and fibular fractures.

Tibia and fibular fractures. Soft tissues injury - muscles, Achilles tendon, tibial and tibial nerves. Clinical, diagnosis and treatment methods. Isolated diaphyseal fractures of the tibia and fibular - the mechanism of injury, diagnosis. First aid, treatment. Fractures of tibia and fibular - clinic, features of diagnostics. First aid. Conservative and operative methods of treatment

Topic 16 Injury of the ankle joint and foot

Injury of the ankle joint and foot . Stretching and rupture of ligaments, differential diagnosis, First aid and Modern methods of treatment. Talus fractures - mechanogenesis, clinic, diagnosis and treatment. Subtalar dislocation of the foot, its diagnosis and treatment. Lisfranc injury, Shopar's joints and their treatment. Fractures of the metatarsals and phalanges Interphalange joint dislocations - clinic, diagnosis. First aid. Treatment.

Topic 17 Spinal injury

Spinal injury. The concept of anterior and posterior support complexes of the spine. Unstable spinal injuries. Isolated supraosseous and intercostal ligament - the mechanism of injury, diagnosis and treatment. Fractures of transverse and spinous processes, lamina and articular processes - diagnosis, treatment. Injury to the vertebral bodies - the mechanism of injury, "favorite" location of the injury, diagnosis, conservative (functional, one-step reposition, gradual reposition) and operative (posterior fixation, vertebral replacement, spondylodesis), methods treatment. Treatment of complicated vertebral body fractures is an indication for decompression operations on the spine, prevention of bedsores

Topic 18 Pelvic injuries

Pelvic injuries. Classification of pelvic injuries. The mechanism of Injury. Clinical picture of pelvic fractures without disruption of continuity of a pelvic ring and with disruption of the continuity of the pelvic ring, Pelvic fractures with damage to the pelvic organs. Modern diagnostic methods. Pre-hospital care. Shock and its treatment in patients with pelvic trauma. Conservative and surgical methods of treatment of patients with pelvic fractures, rehabilitation.

Topic 19 Congenital deformities of the musculoskeletal system. Posture disorders. Scoliotic disease.

Etiology of congenital deformities, frequency and prevention. Principles of diagnostic and early treatment. Congenital deformities of the neck. diagnosis and treatment. Webbing, polydactylism. Congenital hip dislocation. Clinic, diagnosis and treatment. Congenital clubfoot - clinic, diagnosis and treatment. Posture disorders. Scoliotic disease. The concept of "posture". Type of posture. The concept of "lordosis", "kyphosis", "scoliosis". Etiopathogenesis, pathomorphology of scoliotic disease. Changes in internal organs. Classification of scoliosis. Types of scoliosis. The course of the disease, clinical and complications of scoliotic disease. Diagnosis and prognosis. Principles of treatment of patients with scoliosis

Topic 20 Acquired foot deformities. Amputations. Prosthetics in orthopedics

Anatomical and physiological features of the foot. Biomechanics of the foot. Etiology and pathogenesis of development longitudinal, transverse flatfoot and flat-valgus foot. Clinical, radiological and biomechanical methods of diagnosis static foot deformities. Conservative and operative methods of treatment of flatfoot. Types of orthopedic shoes and insoles-supinators used for static deformities of the feet. Amputations. Prosthetics in orthopedics. Limb amputations. The concept of rehabilitation. The concept of Anatomical and physiological features of the foot. Biomechanics of the foot. Etiology and pathogenesis of development longitudinal, transverse flatfoot and flat-valgus foot. Clinical, radiological and biomechanical methods of diagnosis static foot deformities. Conservative and operative methods of treatment of flatfoot. Types of orthopedic shoes and insoles-supinators used for static deformities of the feet. Amputations. Prosthetics in orthopedics. Limb amputations. The concept of rehabilitation. The concept of amputation and exarticulation Principles of amputation stump formation for rational prosthetics. Terms prosthesis.

Topic 21 Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome

Definition of traumatic shock. Frequency and severity of shock in war and in peacetime. Modern ideas about the etiology and pathogenesis of traumatic shock. Clinical manifestations of shock. Comprehensive treatment of shock. Modern methods of correction disorders of hemodynamics, respiration, metabolism and neuroendocrine disorders. Content anti-shock measures during war and extreme situations. Early shock prevention.

Topic 22 Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome

Compartment syndrome, etiology, pathogenesis. Classification. Phases of development. Clinical. tissue damage, strength and duration of acting of the factor during crush. Modern methods of treatment in the conditions of military actions and natural disasters. Features of treatment of open or closed severe soft tissues injury with fracture and without fracture.

<p>Topic 23 Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints</p> <p>Frequency and classification of gunshot fractures. Clinical diagnostic of closed and open fractures. First medical aid , pre-medical /paramedic, medical and specialised surgical care. Gunshot wounds to joints and limbs, their classification. General and local clinical manifestations of joint injury. Complications of joint injuries. First medical aid, pre-medical /paramedic, medical and specialised surgical care. Firearms injuries of the hand, foot and their treatment.</p>
<p>Topic 24 Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints</p> <p>Injuries and damage to blood vessels, their classification, clinical picture and diagnosis of gunshot wounds of large blood vessels. Methods of temporary and final cessation haemorrhage in the field and in extreme situations. Transport immobilization for limb injuries. Symptoms and diagnosis of nerve injury. First medical aid , pre-medical /paramedic, medical and specialised surgical care. for nerve Injury.</p>
<p>Topic 25 Final modular control Control module.</p> <p>Final modular control Control module.</p>

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Collect medical information about the orthopedic-traumatological patient and analyze clinical data, perform basic components of examination, observation, survey, measurement and testing during the examination of an orthopedic-traumatological patient and to document their results.
LO2	Determine the necessary list of laboratory, radiological and / or instrumental studies of orthopedic and trauma patients and evaluate their results.
LO3	Establish a preliminary and clinical diagnosis of injuries and the most common orthopedic diseases.
LO4	Determine the necessary mode of work and rest in the treatment and prevention of patients with orthopedic and traumatic diseases.
LO5	Determine the nature of nutrition in the treatment and prevention of orthopedic and traumatic diseases.
LO6	Demonstrate mastery in methods of prevention of injuries and orthopedic diseases.
LO7	Diagnose emergencies, participate in the provision of first aid for injuries of the musculoskeletal system in case of mass disasters.
LO8	To determine the tactics and provision of emergency medical care, to understand the emergency situation, to outline a plan of emergency diagnostic and therapeutic measures, and to act quickly.
LO9	Carry out medical and evacuation measures, participate in the provision of first aid for injuries of the musculoskeletal system in case of mass disasters. Perform medical manipulations in the treatment of trauma and orthopedic patients.
LO10	Perform medical manipulations in the treatment of trauma and orthopedic patients.

LO11	Ability to diagnose emergencies in musculoskeletal injuries in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
LO12	Will be able to demonstrate mastery in methods of prevention of injuries and orthopedic diseases; explain the principles of rehabilitation and rehabilitation of patients with musculoskeletal disorders.
LO13	Ability to conduct an examination of the orthopedic and trauma patient.
LO14	Will be able to keep medical records, including electronic forms.
LO15	It is clear and ambiguous to communicate one's own knowledge, conclusions and arguments on health issues and related issues to professionals and non-specialists, in particular to students.
LO16	Will be able to assess the impact of the environment, socio-economic and biological determinants on the features of the population's disease on orthopedic pathology and injuries.
LO17	Adherence to ethical principles when working with patients with injuries and orthopedic diseases of the musculoskeletal system, and with laboratory animals.

7. Teaching and learning activities

7.1 Types of training

<p>Topic 1. History of Orthopedics and Traumatology. Modern achievements of orthopedics and traumatology. Principles and modern methods of treatment of fractures. Traumatic dislocations.</p>
<p>lect.1 "History of Orthopedics and Traumatology. Modern achievements of orthopedics and traumatology. Domestic orthopedic schools." (full-time course)</p> <p>History of Orthopedics and Traumatology. Modern achievements of orthopedics and traumatology. Domestic orthopedic schools.</p>
<p>Topic 2. Congenital deformities of the musculoskeletal system. Congenital hip dislocations.</p>
<p>lect.2 "Topic 2. Congenital deformities of the musculoskeletal system. Congenital hip dislocations." (full-time course)</p> <p>Congenital deformities of the musculoskeletal system, scoliotic disease. Etiopathogenesis, pathological anatomy of scoliotic disease. Comprehensive treatment. Congenital dislocations tightened. Hip dysplasia. Congenital muscular curvature of the neck. Etiopathogenesis, severity, clinic, radiological diagnosis.</p>
<p>Topic 3. Injuries to the shoulder, elbow joint, forearm. Hip joint and knee joint</p>
<p>lect.3 "Damage to the shoulder, elbow joint, forearm. Hip injuries, knee joint" (full-time course)</p> <p>Damage to the shoulder, elbow joint, forearm. Classification of fractures, principles treatment. Damage to the thigh, knee joint, the mechanism of formation. Clinical and radiological diagnosis. Principles of treatment.</p>
<p>Topic 4. Injury to the leg, ankle joint, foot. Osteochondrosis.</p>

lect.4 "Damage to the lower leg, ankle joint, foot. Osteochondrosis of the spine." (full-time course)

Shin fractures. Damage to the soft tissues of the lower leg - muscles, Achilles tendon, tibial and tibial nerves. Clinic, diagnosis, treatment methods. Isolated diaphyseal fractures of the tibia - the mechanism of damage, diagnosis. First aid, treatment. Fractures of both shin bones - clinic, features of diagnostics. First aid. Conservative and operative methods of treatment. Osteochondrosis of the spine. Clinical and radiological diagnosis. Principles of treatment. Osteoarthritis.

Topic 5. Polytrauma. Therapeutic tactics. Gunshot wounds of the musculoskeletal system.

lect.5 "Polytrauma. Therapeutic tactics. Gunshot wounds of the musculoskeletal system." (full-time course)

Polytrauma. Therapeutic tactics. Clinical groups of multiple and combined injuries. Thermal injury. Traumatic brain injury. Gunshot wounds of the musculoskeletal system systems..

Topic 6. Methods of diagnosis of orthopedic-traumatological patient.

pr.tr.1 "Features of examination of an orthopedic-traumatological patient. Writing scheme medical history of an orthopedic-traumatological patient" (full-time course)

Features of examination of an orthopedic-traumatological patient. The scheme of writing history diseases of the orthopedic and traumatological patient. Methods of examination of the patient: complaints (on at the time of examination and at the time of injury), history (mechanogenesis) of the disease or damage to the musculoskeletal system. Life history. Somatic status. Review, palpation, measurement of the musculoskeletal system, checking the main symptoms. Determining the length of the segments and the entire limb, determining the circumference of the segments, determination of the volume of movements and detection of excessive movements in large joints. Standing and walking. Additional survey methods.

Topic 7. Reparative bone regeneration. Modern principles of treatment fractures.

pr.tr.2 "Reparative bone regeneration. Modern principles of treatment bone fractures." (full-time course)

Reparative bone regeneration. Modern principles of treatment of bone fractures. The mechanism of occurrence of typical types of bone fractures. Classification of fractures. Diagnosis of fractures of the bones of the extremities, chest, spine and pelvis. Providing the first medical and first aid for fractures. General patterns of the process reparative regeneration. Basic principles of treatment. Fixation, extension, operative and compression-distraction treatments. Indications for treatment in outpatient and inpatient settings. The concept of fracture fusion, recovery limb function and recovery.

Topic 8. Traumatic dislocations.

pr.tr.3 "Traumatic dislocations." (full-time course)

Traumatic dislocations. Classification of dislocations, the mechanism of injury of dislocations, pathomorphological changes in the joint and surrounding tissues during dislocation, possible complications. Clinical features and radiological diagnostics. Basic principles of treatment. Pre-hospital care for joint dislocations.

Topic 9. Chest and upper arm injuries

pr.tr.4 "Chest and upper arm injuries" (full-time course)

Chest and upper arm injuries. The mechanism of sternal fractures. Types bias. Complications of sternal fracture - trauma to the mediastinum. Clinic, diagnostics. Treatment of sternal fractures. Treatment of bruises and ruptures of the heart. Rib damage - isolated, multiple and executive (sash). Mechanism, diagnosis, treatment. Complicated fractures of the ribs - damage to the pleura and lungs chest injury. Pneumothorax in closed chest trauma - valvular and closed. Hemothorax. The mechanism of external respiration disorder. Pleuropulmonary shock. Granting first aid. Principles of treatment.

Topic 10. Shoulder injury

pr.tr.5 "Shoulder injury" (full-time course)

Shoulder injury. Damage to the soft tissues of the shoulder - muscles, tendons, nerves. Clinic, diagnosis, treatment. Classification of lesions of the proximal metaepiphysis. The mechanism of fractures. Diagnosis, treatment. Fractures of the diaphysis of the shoulder - features diagnosis, treatment. Intra-articular fractures of the distal end of the humerus - classification, diagnosis, treatment. Elbow fractures appendix - mechanism and variants of fracture, diagnosis, indications and methods conservative and operative treatment. Fractures of the coronal process of the elbow bones - diagnosis, treatment. Fractures of the head and neck of the radial bone - the mechanism injuries, clinic, diagnosis, treatment.

Topic 11. Injury of the forearm.

pr.tr.6 "Injury of the forearm." (full-time course)

Injury of the forearm. Fractures of the diaphyses of the forearm bones - features of displacement, diagnosis, treatment. Isolated fracture of the radial bone shaft. Fracture ulna with dislocation of the head of the radial bone (Montague fracture), fracture radial bone and dislocation of the head of the humerus (Galiazzo fracture) - flexion and extensor fracture options, diagnosis, treatment methods. Radiation fractures bones in a typical place (Colles fracture and Smith fracture) - fracture mechanism, diagnosis, treatment

Topic 12. Injuries to the wrist and hand.

pr.tr.7 "Injuries to the wrist and hand." (full-time course)

Injuries to the wrist and hand. Bone fractures wrist (boat-shaped, crescent-shaped). Clinic, conservative and operative methods treatment. Damage to the radial wrist ligament. Hygroma of the wrist joints. Damage to the tendons of the flexors and extensors of the fingers. Diagnosis. Conservative treatment. Damage to the extensors of the fingers. Principles of surgical treatment tendon damage within the bone. Tendon sutures. Tactics while simultaneous damage to the tendons of the superficial and deep flexors within the finger. Fractures metacarpal bones and phalanges of the fingers - diagnosis, treatment, Bennett's fracture -diagnosis of treatment. Dislocation of the metacarpal bones and phalanges of the fingers.

Topic 13. Femoral Fracture

pr.tr.8 "Hip injury." (full-time course)

Classification of damage to the proximal femur bones. Medial fractures of the femoral neck. Clinically diagnosis of fractures of the proximal end of the femur. Providing the first assistance. Modern methods of treatment (conservative and operational). Intervertebral and transvertebral fractures of the thigh - a mechanism occurrence of damage, diagnosis, conservative and operative methods of treatment. Diaphyseal fractures - features of displacement fragments in fractures in the upper, middle and lower thirds of the thigh. Clinic, diagnosis, treatment.

Topic 14. Injury of the knee joint.

pr.tr.9 "Injury of the knee joint." (full-time course)

Injury of the knee joint. Slaughter and hemarthrosis. Clinic. Treatment. Damage lateral and cruciate ligaments, their clinical diagnosis and modern methods of treatment. Damage to the menisci of the knee joint, their diagnosis and treatment. Goff's disease. Rupture of the tendon of the rectus femoris and the own ligament of the knee. Knee fractures - fracture options and mechanism of injury, clinical picture, diagnosis, methods conservative and operative treatment. Intra-articular fractures are fractures condyles of the femur and tibia and their treatment.

Topic 15. Tibia and fibular fractures.

pr.tr.10 "Shin fractures." (full-time course)

Shin fractures. Damage to the soft tissues of the lower leg - muscles, Achilles tendon, tibial and tibial nerves. Clinic, diagnosis, treatment methods. Isolated diaphyseal fractures of the tibia - the mechanism of damage, diagnosis. First aid, treatment. Fractures of both shin bones - clinic, features of diagnostics. First aid. Conservative and operative methods of treatment

Topic 16. Injury of the ankle joint and foot

pr.tr.11 "Injury of the ankle and foot joint" (full-time course)

Injury of the ankle and foot joint. Stretching and rupture of ligaments ankle joint - differential diagnosis. Methods of treatment. First aid. Modern methods of treatment. Fractures of the talus - diagnosis, treatment. Heel bone fractures - mechanogenesis, clinic, diagnosis and treatment. Subtalar dislocation of the foot, its diagnosis and treatment. Dislocations in the joint Lisfranc, Shopar's joints and their treatment. Fractures of the metatarsals and phalanges of the fingers; finger dislocations - clinic, diagnosis. First aid. Treatment.

Topic 17. Spinal injury

pr.tr.12 "Spinal cord injury" (full-time course)

Spinal cord injury. The concept of anterior and posterior support complexes of the spine. Features of unstable spinal injuries. Isolated supraosseous lesions and intercostal ligament - the mechanism of damage, diagnosis, treatment. Fractures transverse and spinous processes, brackets and articular processes - diagnosis, treatment. Damage to the vertebral bodies - the mechanism of injury, "favorite" location of the injury, diagnosis, conservative (functional, one-step reposition, gradual reposition) and operative (posterior fixation, vertebral replacement, spondylodesis) methods treatment. Treatment of complicated vertebral body fractures is an indication for decompression operations on the spine, prevention of bedsores, counter

Topic 18. Pelvic injuries

pr.tr.13 "Pelvic injuries" (full-time course)

Pelvic injuries. Classification of pelvic injuries. The mechanism of different types of damage. Clinical, picture at pelvic fractures without disturbance of continuity of a pelvic ring, with violation of the continuity of the pelvic ring and fractures of the pelvic bones with damage pelvic organs. Modern diagnostic methods. Pre-hospital care. Features of the course of shock and its treatment in patients with pelvic trauma. Conservative and surgical methods of treatment of patients with different types of pelvic fractures. Duration of loss working capacity, rehabilitation.

Topic 19. Congenital deformities of the musculoskeletal system. Posture disorders. Scoliotic disease.

pr.tr.14 "Congenital deformities of the musculoskeletal system. Posture disorders. Scoliotic disease." (full-time course)

Congenital deformities of the musculoskeletal system. Posture disorders. Scoliotic disease. Etiology of congenital deformities, frequency and prevention. Principles of detection and early treatment. Congenital deformities of the neck. diagnosis and treatment. Webbing, polydactylism. Congenital hip dislocation. Clinic, diagnosis and treatment. Congenital clubfoot - clinic, diagnosis and treatment. Posture disorders. Scoliotic disease. The concept of "posture". See set. The concept of "lordosis", "kyphosis", "scoliosis". Etiopathogenesis, pathomorphology of scoliotic disease. Changes in internal organs. Classification of scoliosis. Clinic of different degrees of scoliosis. The course of the disease, results and complications of scoliotic disease. Diagnosis of flow prediction. Principles of treatment of patients with scoliosis.

Topic 20. Acquired foot deformities. Amputations. Prosthetics in orthopedics

pr.tr.15 "Acquired foot deformities. Amputations. Prosthetics in orthopedics" (full-time course)

Acquired foot deformities. Amputations. Prosthetics in orthopedics. Anatomical and physiological features of the foot. Biomechanics of the foot. Etiology and pathogenesis of development longitudinal, transverse flatfoot and flat-valgus foot. Clinical, radiological and biomechanical methods for detecting static foot deformities. Conservative and operative methods of treatment of flattening of the arches of the foot. Types of orthopedic shoes and insoles-supinators used for static deformities of the feet. Amputations. Prosthetics in orthopedics. Limb amputations. The concept of rehabilitation. The concept of amputation and exarticulation Principles of amputation stump formation for rational prosthetics. Terms prosthesis.

Topic 21. Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome

pr.tr.16 "Gunshot wounds of the musculoskeletal system. Traumatic shock. Syndrome prolonged crushing" (full-time course)

Gunshot wounds of the musculoskeletal system. Traumatic shock. Syndrome prolonged crushing. Definition of traumatic shock. Frequency and severity of shock in war and in peacetime. Modern ideas about the etiology and pathogenesis of traumatic shock. Clinical manifestations of shock at different localizations of wounds. Comprehensive treatment of shock. Modern methods of correction disorders of hemodynamics, respiration, metabolism and neuroendocrine disorders. Content anti-shock measures in the conditions of military actions and extreme situations. Early shock prevention.

Topic 22. Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome

pr.tr.17 "Gunshot wounds of the musculoskeletal system. Traumatic shock." (full-time course)
Prolonged crushing syndrome, etiology, pathogenesis. Classification. Phases of development. Clinic. Dependence of tissue damage, strength and duration of action of the factor on them crush. Modern methods of treatment in the conditions of military actions and natural disasters. Features of treatment of open and closed large lesions of soft tissues with fracture and without bone fracture.

Topic 23. Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints

pr.tr.18 "Gunshot wounds of the musculoskeletal system. Fire and closed damage to limbs and joints" (full-time course)
Gunshot wounds of the musculoskeletal system. Fire and closed damage to limbs and joints. Frequency and classification of gunshot bone fractures. Clinic and diagnosis of closed and open fractures. The volume of the first medical, pre-medical (paramedic), the first medical and qualified surgical care. Gunshot wounds to joints and limbs, their classification. General and local clinical manifestations of joint damage. Complications of joint injuries. The volume of the first medical, pre-medical (paramedic), first aid and qualified surgical care. Firearms injuries of the hand, foot and their treatment

Topic 24. Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints

pr.tr.19 "Gunshot wounds of the musculoskeletal system. Fire and closed damage to limbs and joints" (full-time course)
Injuries and damage to blood vessels, their classification, clinical picture and diagnosis of gunshot wounds of large blood vessels. Methods of temporary and final cessation of bleeding in the field and in extreme situations. Transport immobilization for limb injuries. Symptoms and diagnosis of nerve damage. The volume of the first medical, pre-medical (paramedic), first medical and qualified surgical care for nerve damage.

Topic 25. Final modular control Control module.

pr.tr.20 "Final modular control Control module." (full-time course)
Final modular control Control module.

7.2 Learning activities

LA1	Self-study
LA2	E-learning in systems (Zoom, MIX.sumdu.edu.ua)
LA3	Practical work with the patient in the specialized departments of the hospital
LA4	Interpretation of laboratory (clinical analysis of blood, urine, biochemical analysis of blood, etc.) and instrumental (ultrasound, CT, radiography, etc.) methods of examination
LA5	Comprehend the Case Situation

LA6	Training of practical skills in the simulation center
LA7	Watching educational films
LA8	Preparation for practical classes
LA9	Work with textbooks and relevant information sources

8. Teaching methods

Course involves learning through:

TM1	Lectures
TM2	Practical training
TM3	Case-based learning (CBL).
TM4	Cross-discussion
TM5	Learning based on the analysis of a clinical case, situation
TM6	Execution of situational tasks
TM7	Learning through research.
TM8	Research-based learning (RBL).
TM9	Practical demonstrations

The discipline is taught using modern teaching methods (CBL, TBL, RBL), which not only promote the development of professional skills, but also stimulate creativity and scientific activities and aimed at training practice-oriented specialists

The discipline provides students with the following soft skills: GC 1. Ability to abstract thinking, analysis, and synthesis. GC 2. Ability to learn, master modern knowledge. GC 3. Ability to apply the knowledge in practice. GC 4. Knowledge and understanding of the subject area and professional activity comprehension. GC 5. Ability to adapt and act in a new situation. GC 6. Ability to make reasoned decisions. GC 7. Teamwork ability; GC 8. Ability to interpersonal skills. GC 10. Ability to use information and communication technologies. GC 11. Ability to search, process, and analyze information from various sources. GC 12. Determination and persistence on the tasks and commitments undertaken.

9. Methods and criteria for assessment

9.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

9.2 Formative assessment

FA1	Protection of presentations and abstracts
FA2	Comprehend the case situation
FA3	Discussion and self-correction of work done by students
FA4	Teacher's instructions in the process of performing practical tasks
FA5	Diagnostic testing
FA6	Solving clinical cases

9.3 Summative assessment

SA1	Overall score for the current success in the discipline
SA2	Interviews and oral comments of the teacher on his results
SA3	Examination and evaluation of written assignments
SA4	Assessment of practical skills
SA5	Final modular control

Form of assessment:

10 semester	200 scores
SA1. Overall score for the current success in the discipline	120
	120
SA5. Final modular control	80
	80

Form of assessment (special cases):

10 semester	200 scores
SA1. Overall score for the current success in the discipline	120
	In case of quarantine restrictions, the exam is conducted remotely using Zoom, Google meet. 120
SA5. Final modular control	80
	In case of quarantine restrictions, the exam is conducted remotely using Zoom, Google meet. 80

Students who have attended all classroom classes, completed the curriculum and scored at least the minimum number of points (72 points) are admitted to the final module control. The final module control is carried out by writing a paper, assessing practical skills, interviews.

10. Learning resources

10.1 Material and technical support

MTS1	Medical facilities / premises (clinical bases - KU SMK1 Orthopedic and Traumatology Department №1 and №2, trauma center; KU "ODKL" - orthopedic department; Medical Vertebrological Center)
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MTS2	Library funds, archive of radiographs, computer tomograms, results of laboratory methods of examination
MTS3	Computers, computer systems and networks
MTS4	Laboratory equipment (chemical, physical, medical, materials and preparations, etc.)
MTS5	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens, smart boards, etc.)
MTS6	Simulation center

10.2 Information and methodical support

Essential Reading	
1	Self-massage; Types and methods of execution: Tutorial/ Shyshchuk V.D., Terekhov A.N., Nurein M.N., Mrita E.G.- Суми: ТОВ «ВПП «Фабрика друку», 2021.-104р.
3	Сучасні методи лікування остеохондрозу шийного відділу хребта: методичні рекомендації = Modern methods of treatment of cervical spine osteochondrosis: guidelines / Укладачі: В. Д. Шишук, А. М. Терехов, Н. М. Нурейн, Е. Г. Мріта. Суми : СумДУ, 2020. 48 с.
Supplemental Reading	
1	Bigunyak V.V., Felt M.Yu. Thermal lesions. Ternopil. Ukrmedkniga. 2004 - 196 s.
2	Gaiko G.V., Kalashnikov A.V., Besedinskiy S.M., Polizhko V.P., Kurilo A.A. State and prospects for the development of orthopedic and traumatological care in Ukraine. Kiev.-2001.
3	Immobilization, compression and distraction in practical traumatology and orthopedics (own analytical and classification materials). Ternopil. Ukrmedkniga 2000 - 240 p.
4	Alexey A.P. Orthopedics. Ternopil. Ukrmedkniga. 2006 - 528 p.
5	Sklyarenko E.T. Traumatology and Orthopedics. Kiev. Health. 2005 - 384 p

COURSE DESCRIPTOR

№	Topic	Total, hours	Lectures, hours	Workshops (seminars) , hours	Labs, hours	Self-study of the material, hours	Individual tasks, hours
full-time course form of study							
1	History of Orthopedics and Traumatology.Modern achievements of orthopedics and traumatology. Principles and modern methods of treatment of fractures.Traumatic dislocations.	2	2	0	0	0	0
2	Congenital deformities of the musculoskeletal system. Congenital hip dislocations.	2	2	0	0	0	0
3	Injuries to the shoulder, elbow joint, forearm. Hip joint and knee joint	2	2	0	0	0	0
4	Injury to the leg, ankle joint, foot. Osteochondrosis.	2	2	0	0	0	0
5	Polytrauma. Therapeutic tactics. Gunshot wounds of the musculoskeletal system.	2	2	0	0	0	0
6	Methods of diagnosis of orthopedic-traumatological patient.	4	0	2	0	2	0
7	Reparative bone regeneration. Modern principles of treatment fractures.	4	0	2	0	2	0
8	Traumatic dislocations.	4	0	2	0	2	0
9	Chest and upper arm injuries	4	0	2	0	2	0
10	Shoulder injury	5	0	2	0	3	0
11	Injury of the forearm.	5	0	2	0	3	0
12	Injuries to the wrist and hand.	4	0	2	0	2	0
13	Femural Fracture	4	0	2	0	2	0
14	Injury of the knee joint.	4	0	2	0	2	0
15	Tibia and fibular fractures.	4	0	2	0	2	0
16	Injury of the ankle joint and foot	4	0	2	0	2	0
17	Spinal injury	4	0	2	0	2	0
18	Pelvic injuries	4	0	2	0	2	0
19	Congenital deformities of the musculoskeletal system. Posture disorders. Scoliotic disease.	4	0	2	0	2	0

№	Topic	Total, hours	Lectures, hours	Workshops (seminars), hours	Labs, hours	Self-study of the material, hours	Individual tasks, hours
20	Acquired foot deformities. Amputations. Prosthetics in orthopedics	4	0	2	0	2	0
21	Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome	4	0	2	0	2	0
22	Gunshot wounds of the musculoskeletal system. Traumatic shock. Compartment Syndrome	4	0	2	0	2	0
23	Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints	4	0	2	0	2	0
24	Gunshot wounds of the musculoskeletal system. Gunshot and closed damage to limbs and joints	4	0	2	0	2	0
25	Final modular control Control module.	2	0	2	0	0	0
<i>Total (full-time course form of study)</i>		<i>90</i>	<i>10</i>	<i>40</i>	<i>0</i>	<i>40</i>	<i>0</i>



**UNIVERSITY POLICIES FOR THE COURSE
«Traumatology and Orthopedics»**

Higher education level The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Major: Educational programme 222 Medicine: Medicine
Year of study 2022
Semester one semester
Mode of study full-time course
Language of instruction English

Teacher(s)	Terekhov Andrii Mykhailovych, Duzhyi Ihor Dmytrovych
Contact	M.Sumy KNP CMKL SMR str. 20 years of Victory, 13 Orthopedic department. Department of Surgery, Traumatology, Orthopedics and Tuberculosis a.terihov@med.sumdu.edu.ua trauma@med.sumdu.edu.ua
Time and room for giving consultations	Every Thursday from 16.00 to 18.00 KNP CMKL SMR 2nd floor study room №2 previous entry: trauma@med.sumdu.edu.ua
Links to online educational platforms	https://meet.google.com
Syllabus	https://pg.cabinet.sumdu.edu.ua/report/syllabus/c479969844bf21be9f07eec7d5a8d2002588981
Channels for maintaining contact with the group for receiving and working on materials	El. address of the course of orthopedics and traumatology: trauma@med.sumdu.edu.ua
POLICIES	
Attendance policy	Students who have completed all types of planned educational work, worked out all missed classes by the deadline are allowed to the final modular control.
Assessment policy	170-200 A 5 (excellent) credited Excellent performance with only a small number of errors 164-169 B 4 (good) Above average with several errors 140-163 C In general, the correct operation with a certain number of errors 127-139 D 3 (satisfactory) Not bad, but with a significant number of shortcomings 120-126 E Execution meets the minimum criteria 70-119 Fx 2 (unsatisfactory) not credited Reassembly possible 0-68 F A repeat course in the discipline is required

<p>Deadlines and course retake policy</p>	<p>Measures to recompile the final semester control in order to increase the positive assessment are not provided. In case the student received an unsatisfactory grade for PMK, he must retake it in the form of testing. The maximum grade that a student can receive for PMK - "3". The grade for the discipline that the student receives after re-PMK is defined as the sum of points for current performance and 48 points for PMK. If the student has not rescheduled PMK - the second reschedule is conducted in the form of testing in the presence of the commission. The maximum grade that a student can receive for PMK - "3". After the second re-addition of PMK, all current points received by the student in the discipline are canceled. The total grade for the discipline that a student can receive after the 3rd re-examination of the PMC can not be more than "3", which corresponds to 120 points. The student must reschedule the PMC by the beginning of the next semester.</p>
<p>Assessment appeals policy</p>	<p>The results of the module and semester assessment are subject to appeal. A student must lodge an appeal to the director/dean on the day of certification or after announcing the results, but no later than the next working day. The appeal commission is established by the director/dean's order. The appeal commission's decision may change the grade in case of violations revealed during the attestation.</p>
<p>Academic integrity policy</p>	<p>Participants must complete all tasks according to the course requirements independently. Participants are not allowed to cheat during the written module or summative test. The assignments should not contain plagiarism, facts of fabrication, falsification, cheating. Manifestations of other types of academic dishonesty determined by the Academic Integrity policy are also unacceptable. If a teacher reveals violations of academic integrity by students during the course, the former have the right to take one of the following actions: - to reduce points by up to 40% for practical assignments; - to give recommendations for improving and resubmitting mandatory homework assignments with the reduction of points by up to 25%; - to not accept mandatory homework assignments without the right to resubmit; - set a date for retaking the written module or the summative test with a reduction of points by up to 15%; - to not allow to retake the written module or the summative test.</p>

Alignment of learning outcomes with teaching and learning activities and assessment

Learning outcomes	Types of training	Learning activities	Teaching methods	Material and technical support	Methods and criteria for assessment
LO1	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA3, LA4, LA5	TM1, TM2, TM3, TM5, TM7	MTS1, MTS2, MTS3	SA1, SA2, SA3, SA4, SA5
LO2	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA4, LA5, LA8	TM1, TM2, TM6, TM7, TM8	MTS1, MTS2, MTS4	SA1, SA2, SA3, SA4, SA5
LO3	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA4, LA5, LA6, LA8	TM1, TM2, TM3, TM6, TM7, TM8	MTS1, MTS2, MTS4, MTS6	SA1, SA2, SA3, SA4, SA5
LO4	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA3, LA7, LA9	TM1, TM2, TM3, TM4, TM5	MTS1, MTS2, MTS3, MTS5	SA2, SA3
LO5	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA3, LA5	TM1, TM2, TM3, TM5, TM6	MTS1, MTS2, MTS3	SA2, SA3
LO6	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA2, LA3, LA7	TM1, TM2, TM5, TM6, TM8	MTS1, MTS2, MTS3	SA2, SA3
LO7	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA5, LA6, LA7	TM1, TM2, TM6, TM8, TM9	MTS1, MTS2, MTS5, MTS6	SA1, SA2, SA3, SA4, SA5
LO8	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA5, LA6, LA7	TM1, TM2, TM6, TM8	MTS1, MTS2, MTS5, MTS6	SA1, SA2, SA3, SA4, SA5
LO9	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA3, LA5, LA6, LA7, LA9	TM1, TM2, TM5, TM8, TM9	MTS1, MTS2, MTS3, MTS6	SA1, SA2, SA3, SA4, SA5
LO10	pr.tr.1-pr.tr.20	LA3, LA4, LA5, LA6	TM2, TM7, TM8, TM9	MTS1, MTS2, MTS4, MTS6	SA2, SA3, SA4
LO11	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA5, LA7, LA8	TM1, TM2, TM3, TM5, TM6	MTS1, MTS2, MTS3	SA1, SA2, SA3, SA4, SA5
LO12	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA5, LA7, LA8	TM1, TM2, TM3, TM4, TM5, TM6	MTS1, MTS2, MTS5	SA1, SA2, SA3, SA5

Learning outcomes	Types of training	Learning activities	Teaching methods	Material and technical support	Methods and criteria for assessment
LO13	lect.1-lect.5, pr.tr.1-pr.tr.20	LA2, LA3, LA4, LA9	TM1, TM2, TM3, TM5, TM6	MTS1, MTS2, MTS3, MTS4	SA2, SA3, SA5
LO14	pr.tr.1-pr.tr.20	LA1, LA3, LA9	TM2, TM5, TM9	MTS1, MTS2, MTS3	SA2, SA3, SA4
LO15	lect.1-lect.5, pr.tr.1-pr.tr.20	LA1, LA4, LA5, LA7, LA9	TM1, TM2, TM3, TM4, TM6	MTS1, MTS2, MTS3	SA2, SA3
LO16	pr.tr.1-pr.tr.20	LA1, LA2, LA5, LA7	TM3, TM4, TM7	MTS1, MTS2, MTS3	SA2
LO17	lect.1-lect.5, pr.tr.1-pr.tr.20	LA3, LA4, LA5, LA7	TM1, TM2, TM5, TM6, TM8	MTS1, MTS2, MTS3	SA1, SA2, SA3