

Khanty-Mansiysk Autonomous Okrug-Ugra
"Surgut State University"

Approved by
Deputy Rector for Academic Affairs

_____ E.V. Konovalova

"16" June 2022, Record No.6

Traumatology and Orthopedics

Syllabus

Department	Surgical diseases
Curriculum	s310501-ЛечДелоИн-21-1.plx 31.05.01 Medicine Specialization: General Medicine
Qualification	General Practitioner
Form of study	Full-time
Total (in credit)	5

Total academic hours	180
including:	
Contact	112
Self-study	41
Control hours	27

Control:
Exam, 12th term

Course outline in terms

Academic year (term)	11 (6.1)		12 (6.2)		Total	
	Cur	Syl	Cur	Syl		
Weeks	17 4/6		17 5/6			
Types of classes	Cur	Syl	Cur	Syl	Cur	Syl
Lectures	16	16	16	16	32	32
Practical	32	32	48	48	80	80
Contact	48	48	64	64	112	112
Self-study	24	24	17	17	41	41
Control hours			27	27	27	27
Total	72	72	108	108	180	180

The Syllabus is compiled by:

*Doctor of Medical Sciences, Lecturer, Korzhenvsky V. K.*_____

The Syllabus

Traumatology and Orthopedics

Developed in accordance with the Federal State Educational Standard:

Federal state educational standard of higher education in the specialty 31.05.01 General medicine (Order of the Ministry of Education and Science of the Russian Federation on December 8, 2020 No. 988)

Based on the Curriculum:

31.05.01 GENERAL MEDICINE

Specialization: General Medicine

Approved by the Academic Council of Surgut State University, “16” June 2022, Record No.6

The Syllabus was approved by the department

Surgical diseases

Head of Department, Doctor of Medicine, Professor Darwin V.V.

1. COURSE OBJECTIVES

1.1	The aim of the course is to teach students the theoretical and practical sections of Traumatology and Orthopaedics. Students study a brief history of the development of traumatology and orthopaedics, etiology, pathogenesis of major orthopaedic diseases; damage mechanism; methods of prevention, diagnosis, first aid; principles of rehabilitation in patients - traumatological profile.
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2. COURSE OVERVIEW

Course code (in curriculum):	Б1.О.04.31
2.1	Assumed background:
2.1.1	Clinical pathological anatomy
2.1.2	Clinical pharmacology
2.1.3	Medical rehabilitation
2.1.4	Hospital surgery. Paediatric surgery
2.1.5	Faculty surgery
2.1.6	Clinical pathophysiology
2.1.7	Topographic anatomy, operative surgery
2.1.8	Radiation diagnostics
2.1.9	General surgery
2.1.10	Pathological anatomy
2.1.11	Pathophysiology
2.1.12	Propedeutics of Internal Medicine
2.1.13	Adaptive and age-related physiology
2.1.14	Human anatomy
2.1.15	Life safety
2.1.16	Physics, Mathematics
2.2	Post-requisite courses and practice:
2.2.1	Anesthesiology, resuscitation, intensive care
2.2.2	Emergency Medicine
2.2.3	Medical rehabilitation
2.2.4	Outpatient Therapy
2.2.5	Forensic Medicine

3. COMPETENCES UPON COMPLETION OF THE COURSE (MODULE)

PC-1.1: Demonstrates knowledge in etiology, pathogenesis, diagnostic criteria (clinical - subjective, physical, laboratory, instrumental, identifies the patient's common pathological conditions, symptoms, disease syndromes and diagnoses nosological forms according to the International Statistical Classification of Diseases and Related Health Problems, X - XI revisions
PC-1.2: Carries out diagnostics, evaluates the prognosis (short-, medium- and long-term course) of the disease, identifies acute complications and complications of chronic diseases
PC-3.1: Examines the patient (handle the patient's complaints, anamnesis, physical data based on the examination results, determines the necessary examination plan, evaluates the parameters of laboratory, instrumental, pathological and anatomical and other methods in order to diagnose diseases, assesses the prognosis (short-, medium- , long-term) of its course and outcomes
PC-3.2: Makes an initial and clinical diagnosis in accordance with the International Statistical Classification of Diseases and Health Problems X - XI revisions and current clinical classifications
PC-3.3: Carries out early and differential diagnostics of diseases
PC-3.4: Provides routing and management of patients based on the current legislation (standards, procedures for the provision of medical care, Clinical guidelines)
PC-5.1: Demonstrates knowledge of the mechanisms and methods applied in pharmacotherapy, medical nutrition, medical devices and methods of non-drug treatment, palliative and personalized medical care
PC-5.2: Provides various categories of patients with outpatient treatment, treatment in hospitals and high-tech medical care (HMC) centers applying drugs, medical devices and medical nutrition, according to clinical pattern and current procedures, standards of medical care, Clinical guidelines (treatment protocols)
PC-5.4: Demonstrates knowledge of side effects of drugs, methods and duration of their use; assesses the effectiveness and safety of pharmacotherapy, medical nutrition and non-drug treatment, medical nutrition of palliative care
PC-8.2: Keeps medical records, including the electronic format

By the end of the course students must:

3.1 Know:	
3.1.1	- the etiology, pathogenesis, diagnostic criteria (clinical-subjective, physical, laboratory, instrumental), the patient's main pathological conditions, symptoms, disease syndromes and diagnoses in accordance with the International Statistical Classification of Diseases and Problems Related to Health, X- XI revisions.
3.1.2	- mechanisms of actions, methods of application of pharmacotherapy, medical nutrition, medical products and methods of non-drug treatment, palliative and personalized medical care.
3.1.3	- routing and patient management based on current legislation (standards, procedures for the provision of medical care, clinical guidelines).
3.2 Be able to:	
3.2.1	- carry out differential diagnostics, assess the prognosis (briefly, with medium and long-term) course of the disease, reveal complications of acutely arisen and complications of chronic diseases.
3.2.2	- formulate preliminary and clinical diagnoses in accordance with the International Statistical Classification of Diseases and Health Problems X-XI Revisions and current clinical classifications.
3.2.3	- develop a treatment plan (medication, non-medication, palliative) based on the established diagnosis, organize personalized treatment, including for pregnant women, elderly and senile patients, and also evaluate the effectiveness and safety of the therapy.
3.3 Have skills of:	
3.3.1	- maintaining medical records, including in electronic form.
3.3.2	- formulating preliminary and clinical diagnoses in accordance with the International Statistical Classification of Diseases and Problems Related to Health X-XI revisions and current clinical classifications.
3.3.3	- designing medical documentation, including in electronic form.

4. STRUCTURE AND CONTENTS OF THE COURSE (MODULE)

Class Code	Topics /Class type	Term / Academic	Academic hours	Competences	Literature	Interactive	Notes
	Section 1.1 semester						
1.1	Injury is a social problem. Orthopaedics. The history of development. General principles and methods of treatment of injuries and diseases of ODS /Lecture /	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.2	Methods of examination of patients in traumatology and orthopaedics /Lecture /	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.3	Methods of examination of patients in traumatology and orthopaedics / Practical /	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, situational tasks

1.4	Methods of examination of patients in traumatology and orthopaedics / Self-study/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.5	Bone tissue regeneration. Ununited fractures and false joints. Methods of their treatment / Lecture /	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.6	Bone tissue regeneration. Ununited fractures and false joints. Methods of their treatment /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey
1.7	Bone tissue regeneration. Ununited fractures and false joints. Methods of their treatment /Self-study/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.8	Plaster technique, types of plaster casts /Practical/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey
1.9	Plaster technique, types of plaster casts /Self-study /	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.10	Classification, clinical picture, diagnosis of bone fractures. Patient supervision /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey

1.11	Classification, clinical picture, diagnosis of bone fractures /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.12	Injuries of the clavicle, shoulder girdle, shoulder, traumatic dislocation of the shoulder /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
1.13	Injuries of the clavicle, shoulder girdle, shoulder, traumatic dislocation of the shoulder / Lecture /	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.14	Conservative and surgical methods of treatment of the upper shoulder girdle (clavicle, scapula) /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
1.15	Conservative and surgical methods of treatment of the upper shoulder girdle (clavicle, scapula) /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.16	Chest injury/Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
1.17	Chest injury /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

1.18	Upper limb fractures /Lecture/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.19	Upper limb fractures /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test, situational tasks
1.20	Upper limb fractures /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.21	Spinal injury. Fractures of the pelvic bones /Lecture /	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.22	Spinal injury. Fractures of the pelvic bones /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, situational tasks
1.23	Spinal injury. Fractures of the pelvic bones /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.24	Fractures of the shin bones. Ilizarov transosseous compression-distraction osteosynthesis in the treatment of fractures /Lecture/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

1.25	Fractures of the shin bones. Ilizarov transosseous compression-distraction osteosynthesis in the treatment of fractures /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
1.26	Fractures of the shin bones. Ilizarov transosseous compression-distraction osteosynthesis in the treatment of fractures /Self-study/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.27	Fractures of the lower extremity. Injury of the knee joint, fractures of the bones of the lower leg. Diagnostics, treatment /Lecture/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
1.28	Fractures of the lower extremity. Injury of the knee joint, fractures of the bones of the lower leg. Diagnostics, treatment /Practical/	11	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
1.29	Fractures of the lower extremity. Injury of the knee joint, fractures of the lower leg bones. Diagnostics, treatment /Self-study/	11	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
Section 2.12th semester							
2.1	Traumatic brain injury. Peripheral nerve damage /Lecture/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
2.2	Traumatic brain injury. Peripheral nerve damage /Practical /	12	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

2.3	Traumatic brain injury. Peripheral nerve damage /Self-study/	12	2	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.4	Polytrauma /Lecture/	12	1	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.5	Polytrauma /Practical/	12	3	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
2.6	Polytrauma /Self-study/	12	1	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.7	Ankle and foot injury, ankle fractures. Treatment and rehabilitation of trauma patients in the hospital /Practical /	12	4	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test
2.8	Ankle and foot injury, ankle fractures. Treatment and rehabilitation of trauma patients in the hospital /Self-study/	12	1	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.9	Degenerative - dystrophic diseases of the musculoskeletal system. Deforming arthrosis of large joints /Lecture/	12	2	PC -1.1, PC-1.2, PC- 3.1, PC-3.2, PC-3.3, PC- 3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

2.10	Degenerative - dystrophic diseases of the musculoskeletal system. Deforming arthrosis of large joints /Practical/	12	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, abstracts
2.11	Degenerative - dystrophic diseases of the musculoskeletal system. Deforming arthrosis of large joints /Self-study/	12	1	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.12	Bone tumours /Practical/	12	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test, abstracts
2.13	Bone tumours /Self-study/	12	1	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.14	Treatment and rehabilitation of traumatological and orthopedic patients on an outpatient basis. Physiotherapy /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test, abstracts
2.15	Treatment and rehabilitation of traumatological and orthopedic patients on an outpatient basis. Physiotherapy /Self-study/	12	1	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.16	Osteocondritis of the spine /Lecture/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

2.17	Osteocondritis of the spine /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test, abstracts
2.18	Osteocondritis of the spine /Self-study/	12	1	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.19	Congenital dislocation of the hip /Lecture/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.20	Congenital dislocation of the hip /Practical /	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, situational tasks, abstracts
2.21	Congenital dislocation of the hip /Self-study /	12	1	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.22	Congenital clubfoot, torticollis /Practical /	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, situational tasks, abstracts

2.23	Congenital clubfoot, torticollis /Self-study/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.24	Hereditary systemic diseases of the skeleton. Dysplasia, chondrodystrophy. Treatment /Lecture/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.25	Hereditary systemic diseases of the skeleton. Dysplasia, chondrodystrophy. Treatment /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, abstracts
2.26	Hereditary systemic diseases of the skeleton. Dysplasia, chondrodystrophy. Treatment /Self-study/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.27	Osteochondropathies (Legg-Calve-Perthes disease, Osgood-Schlatter disease, Scheuermanamau disease) and others /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, abstracts
2.28	Osteochondropathies (Legg-Calve-Perthes disease, Osgood-Schlatter disease, Scheuermanamau disease) and others /Self-study/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.29	Scoliosis /Lecture/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	

2.30	Scoliosis /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	. Survey, test, abstracts
2.31	Scoliosis /Self-study/	12	2	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.32	Children's central paralysis /Lecture/	12	3	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	
2.33	Children's central paralysis /Practical/	12	4	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.3 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, abstracts
2.34	/Exam/	12	27	PC -1.1, PC-1.2, PC-3.1, PC-3.2, PC-3.3, PC-3.4, PC -5.1, PC-5.2,PC – 5.4, PC-8.2	L1.1 L1.2 L1.4 L2.1 L2.2 L2.3 L3.1 L3.2 E1 E2 E3 E4	0	Survey, test, situational tasks

5. ASSESSMENT TOOLS

5.1. Tests and tasks

Supplement 1.

5.2. Topics for written papers

Supplement 1.

5.3. Assessment tools

Supplement 1.

5.4. List of assessment tools

Oral quiz, test, situational tasks, abstracts. Exam: survey, test, situational tasks.

6. COURSE (MODULE) RESOURCES

6.1. Recommended Literature

6.1.1. Core

	Authors	Title	Publish., year	Quantity
L1.1	Aizenberg V.L., Kotelnikov G.P., Mironov S.P.	Orthopedics: a national guide	M.:GEOTAR-Media, 2013	3

L1.2	Kolomiets A.A., Raspopova E.A.	Traumatology and Orthopedics: Textbook for universities	M.: Yurayt, 2020, Electronic resource	1
L1.3		Traumatology and orthopedics: textbook	M.: GEOTAR-Media, 2018, Electronic resource	1
L1.4	Yagnikov S.A.	Stable-functional osteosynthesis in traumatology, orthopedics and oncoorthopedics of dogs: a tutorial	M.: KolosS, 2010, Electronic resource	1
6.1.2. Supplementary				
L2.1	Okorokov A.N., Bazeko N.P.	Deforming osteoarthritis	M.: Medical Literature, 2018, Electronic resource	1
L2.2	Kolomiets A.A., Raspopova E.A.	Traumatology and Orthopedics: Textbook for universities	M.: Yurayt, 2019, Electronic resource	1
L2.3	Noskov S.M.	Conservative treatment of osteoarthritis: a practical guide	M.: GEOTAR-Media, 2014, Electronic resource	1
6.1.3. Methodical development				
	Authors	Title	Publish., year	Quantity
L3.1	Kaplunov O. A.	Ilizarov transosseous osteosynthesis in traumatology and orthopedics	M.: GEOTAR-Media, 2002	4
L3.2	Tarasenko L. L., Zavertailo L. L.	Objective methods for the study of foot deformities: a teaching aid	Surgut: Surgut State University, 2016, Electronic resource	2
6.2. Internet resources				
E1	Pirogov Bulletin on Traumatology and Orthopedics			
E2	Journal of Traumatology and Orthopedics of Russia			
E3	Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarova			
E4	Pediatric Traumatology, Orthopedics and Reconstructive Surgery			
6.3.1 Software				
6.3.1.1	Operational system Microsoft, applied programs pack Microsoft Office			
6.3.2 Information Referral systems				
6.3.2.1	E-data bases: RGB,			
7. MATERIAL AND TECHNICAL SUPPORT OF DISCIPLINE (MODULE)				
7.1	Classrooms for practical classes, group and individual consultations, monitoring and intermediate certification are equipped with: typical classroom furniture, technical teaching aids, employees for the presentation of educational information.			
7.2	Practical classes, group and individual consultations, monitoring and intermediate certification are held in the classrooms of the Department of Faculty Surgery, Surgut. st. Nefteyuganskoe shosse, 20.			
7.3	Premises of Surgut Clinical Trauma Hospital: a study room in the building of a children's hospital, equipped with the necessary specialized educational furniture and technical means for providing educational information to students, equipped with seats, tables, blackboard and chalk; equipped with a multimedia projector (1), a computer (1).			
7.4	Tables, posters, charts, pictures, multimedia slides.			
7.5	Practical Skills Simulation Center .			
8. Course manuals				
Supplement 2.				

ASSESSMENT TOOLS

Syllabus

TRAUMATOLOGY, ORTHOPEDICS

Qualification

Specialist

Specialty

31.05.01 General Medicine

Form of education
Designer Department

Full-time
Surgical diseases

Graduate Department

Internal Diseases

Sample tasks and tests

Stage I: Formative assessment

Topic 1 "Methods of examination of patients in Traumatology and Orthopaedics"

Exercise 1. Points for oral quiz:

1. Survey methods in traumatology.
2. Methods of examination of orthopaedic patients.
3. Situational task number 1.

Exercise 2. Situational task:

An 82-year-old woman lifted 20 litres from the floor pot filled with liquid and put it on the gas stove. At the moment of raising the pan, something cracked in her spine "somewhere below the shoulder blades" and severe pains appeared in the area of the injury. She did not seek medical help; she rubbed her back with turpentine on her own and lay on her back. The acute events have passed. Two days later, I stood outside for a long time in cold weather. I got very cold. I came home, could not get warm for a long time. Pain in the lower thoracic spine reappeared. I turned to a local therapist. Was diagnosed with sciatica lumbosacral. Rubbing was prescribed. The patient followed the instructions carefully, but her condition gradually worsened. Disturbed by constant pain in the spine when walking, which stopped only in the supine position. Walking gave her great torment. This went on for 9 months. Finally, at the insistence of her relatives, she underwent an X-ray examination of the spine, after which she was hospitalized in a tuberculosis dispensary. On external examination of the lower thoracic spine, there is a noticeable protrusion of the spinous processes of the IX and X thoracic vertebrae. Beating your fingers along the spinous processes of these vertebrae is painful. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired.

What is the diagnosis? What additional research needs to be done? What treatment should be prescribed?

ANSWER STANDARD: To make an X-ray of the thoracic spine, magnetic resonance imaging, laboratory research. Taking into account the elderly age of the patient, to carry out conservative treatment with the use of tuberculostatic drugs. Lay the patient on a bed with a shield and a hard mattress. Prescribe strict bed rest with careful, personalized care

Topic 2 "Bone tissue regeneration. Ununited fractures and false joints. Methods of their treatment"

Exercise 1. Points for oral quiz:

1. Features of the course of the reproduction process in bone fractures and the effect of mechanical factors on bone formation.
2. Stages of callus formation.
3. The concept of an ununited fracture, etiology, diagnostic methods.
4. Treatment of ununited fractures
5. The concept of a pseudarthrosis, etiology, diagnostic method, treatment.

Topic 3 "Plaster technique, types of plaster bandages"

Exercise 1. Points for oral quiz:

1. Determination of the quality of gypsum.
2. Plaster cabinet device.
3. Basic rules for applying plaster casts.
4. Plaster casts for injuries of the upper limb.
5. Plaster bandages for injuries of the lower limb.

Topic 4 "Classification, clinical picture, diagnosis of bone fractures. Patient supervision"

Exercise 1. Points for oral quiz:

Ethics and deontology in the supervision of trauma patients

1. Rules for filling out, maintaining a medical history in a trauma hospital.
2. Classification of bone fractures.
3. The main signs of bone fractures.
4. Methods for diagnosing bone fractures

Topic 5 "Injuries of the clavicle, shoulder girdle, shoulder, traumatic dislocation of the shoulder"

Exercise 1. Points for oral quiz:

Diaphyseal fractures of the humerus. The advantage of the Ilizarov method in the treatment of fractures of this localization.

1. Shoulder injury. Fracture of the surgical neck of the shoulder.
2. Fractures of the proximal humerus.
3. Dislocations of the shoulder.
4. Traumatic dislocations of the shoulder: classification, clinic, methods of reduction.

5. Clavicle fractures. Diagnostics, treatment.

Exercise 2. Test control:

1. When falling on the elbow, shoulder fractures are not typical.
 - a) in the area of the head and anatomical neck
 - b) in the tuberos area
 - c) in the area of the surgical neck
 - d) in the area of the diaphysis
 - e) in the region of the distal end of the humerus

2. In case of a fracture in the upper third of the shoulder for transport fixation
 - a) the arm should be straightened at the elbow joint and fixed to the body
 - b) the shoulder should be abducted to 90 degrees. and brought out in front of the frontal plane by 30-40 degrees.
 - c) the arm should be bent at the elbow joint at an acute angle with the placement of the roller in the armpit, bringing the shoulder to the body and placing the hand on the pectoral muscle of the opposite side
 - d) all of the above is true
 - e) all of the above is incorrect

3. With anterior dislocations of the shoulder, the head may move.
 - a) under the collarbone
 - b) under the coracoid process of the scapula
 - c) anterior to the glenoid cavity
 - d) all of the above is true
 - e) all of the above is incorrect

4. In case of a fracture of the diaphysis of the humerus, the scalene splint for transport immobilization should fix
 - a) fragments of the humerus proximal and distal to the fracture site
 - b) shoulder joint
 - c) shoulder and elbow joints
 - d) a ladder splint is not used for this fracture
 - e) shoulder, elbow and wrist joints

5. With a fracture of the diaphysis of the humerus, it is most often damaged
 - a) subclavian artery
 - b) ulnar nerve
 - c) brachial nerve
 - d) thoracic lymphatic duct
 - e) none of the above

Topic 6 "Conservative and surgical methods of treatment of the upper shoulder girdle (clavicle, scapula)"

Exercise 1. Points for oral quiz:

Clavicle fractures. Diagnostics, treatment.

1. Surgical treatment of a fracture of the clavicle, methods of osteosynthesis of fractures of the clavicle.
2. Fractures of the scapula. Classification, clinic, diagnosis, treatment.

Exercise 2. Test control:

1. With a fracture in the neck of the scapula, displacement of the upper limb in the shoulder girdle is characteristic
 - a) anteriorly and upward
 - b) anteriorly and downward
 - c) backward and downward
 - d) only up
 - e) all of the above is incorrect

2. The most common fracture of the scapula is associated
 - a) with direct injury
 - b) indirectly in case of shoulder dislocation
 - c) indirectly with a fracture of the clavicle
 - d) with all of the above
 - e) with none of the above.

Topic 7 "Injury to the chest"

Exercise 1. Points for oral quiz:

Rib fractures. Clinical picture, diagnosis, treatment of rib fractures.

1. Chest contusion. Diagnostics, treatment.
2. Examination of a patient with chest injury.
3. Complications of chest injuries. Pneumothorax, hydrothorax.

Exercise 2. Test control:

1. With a fracture in the neck of the scapula, displacement of the upper limb in the shoulder girdle is characteristic

- a) anteriorly and upward
- b) anteriorly and downward
- c) backward and downward
- d) only up
- e) all of the above is incorrect

2. The most common fracture of the scapula is associated

- a) with direct injury
- b) indirectly in case of shoulder dislocation
- c) indirectly with a fracture of the clavicle
- d) with all of the above
- e) with none of the above

3. For damage to the pleura and lung tissue with fractured ribs all of the following symptoms are characteristic, except

- a) pneumothorax
- b) subcutaneous emphysema
- c) sharp chest pain
- d) hemoptysis

4. Fracture of the scapula is often accompanied by a fracture

- a) underlying ribs
- b) ribs on the opposite side
- c) clavicle
- d) all of the above
- e) none of the above

5. Fighting respiratory failure at the prehospital stage consists primarily

- a) in tracheal intubation
- b) in the introduction of the oral or nasal airway
- c) in intubation and assisted ventilation
- d) in the toilet of the mouth, pharynx and larynx
- e) in the introduction of respiratory analgesics

Topic 8 "Fractures of the upper limb"

Exercise 1. Points for oral quiz:

1. Diaphyseal fractures of the humerus. The advantage of the Ilizarov method in the treatment of fractures of this localization.
2. Shoulder injury. Fracture of the surgical neck of the shoulder.
3. Fractures of the proximal humerus.
4. Forearm fractures: diagnosis and treatment.
5. Fracture of the olecranon. Treatment methods.
6. Fracture-dislocation of the forearm bones (Monteggia and Galiazi) - diagnosis and treatment.
7. Radial fractures in a typical location: clinical presentation, diagnosis and treatment.
8. Fracture of the wrist bones of the 1st navicular bone: mechanism, clinical picture, treatment.
9. Metacarpal fractures, treatment method.

Exercise 2. Test control:

1. In case of damage to the wrist joint and fingers

- a) transport immobilization is not carried out
- b) the splint is located from the ends of the fingers to the distal third of the forearm
- c) the splint is located from the ends of the fingers to the elbow
- d) the splint fixes the shoulder, elbow and wrist joints
- e) all of the above is incorrect

2. With a fracture of the radius in a typical place, it is damaged

a) distal metaepiphysis of the radius

- b) the diaphysis of the radius
- c) the neck of the radius
- d) all of the above
- e) none of the above

3. With a fracture of the diaphysis of the humerus, it is most often damaged

- a) subclavian artery
- b) ulnar nerve
- c) brachial nerve
- d) thoracic lymphatic duct
- e) none of the above

4. When falling on the elbow, shoulder fractures are not typical.

- a) in the area of the head and anatomical neck
- b) in the tuberos area
- c) in the area of the surgical neck
- d) in the area of the diaphysis
- e) in the region of the distal end of the humerus

5. In case of fracture of the diaphysis of the humerus, the scalene splint for transport immobilization should fix

- a) fragments of the humerus proximal and distal to the fracture site
- b) shoulder joint
- c) shoulder and elbow joints
- d) a ladder splint is not used for this fracture
- e) shoulder, elbow and wrist joints

Exercise 3. Situational task:

Situational task

A teenager in physical education classes at school hit a sports equipment with his right hand. Went to the trauma center. Objectively: there is a subcutaneous hematoma on the dorsum of the middle phalanx of the third finger of the right hand. The toe is swollen, painful to feel. Flexion is limited. The skin is not damaged. Finger axis loading is painless.

What is your diagnosis? What additional research needs to be done? What is the treatment tactics?

ANSWER STANDARD: Contusion of the middle phalanx of the third finger of the right hand. In order to exclude a fracture, make an X-ray of the third finger of the right hand. To ensure rest, apply a plaster cast to the finger. At the same time, bend your finger slightly. On the 1st day after the injury, apply cold to the finger, and on the 2nd day - heat (baths, paraffin). Recommend UHF therapy, physiotherapy exercises.

Topic 9 “Injuries of the spine. Fractures of the pelvic bones”

Exercise 1. Points for oral quiz:

1. Fractures of the pelvic bones. Mechanisms of injury. Treatment.
2. Clinical symptoms in various fractures of the pelvic bones.
3. Possible complications of pelvic fractures.
4. Fractures of the vertebral bodies: clinical picture, diagnosis and treatment
5. Damage to the cervical spine (rotational subluxation of the atlas).
6. Injury to the thoracic spine
7. Compression fractures of the lumbar spine (determination of the degree of compression).

Exercise 2. Situational task:

Situational task

A 36-year-old man, driving a car, collided with a truck at night on the highway. As a result of the collision, he was pressed tightly against the seat by the steering wheel. People who happened to be nearby tried to remove the driver from the car. Their inept and hasty actions led to severe spinal injury. The victim was taken to the spinal center of the hospital. Burning pains in the thoracic spine disturb. Objectively: the movements in the spine are constrained. In the lower thoracic spine, swelling, subcutaneous hematoma, increased thoracic kyphosis. The standing of the spinous processes of the X-XI thoracic vertebrae is noted. Palpation of the spinous processes at the level of damage is painful. The motor and sensory functions of the legs are absent. The function of the pelvic organs is impaired.

What is your diagnosis? What additional research needs to be done? What is the treatment tactics?

ANSWER STANDARD: Closed compression fracture of the bodies of the X-XI thoracic vertebrae with a complete rupture of the spinal cord.

It is necessary to do an x-ray examination of the spine, magnetic resonance imaging, lumbar puncture with examination of the cerebrospinal fluid. Lay the patient on his back on a bed with a shield and a hard mattress. Perform a gradual reposition of the damaged vertebrae. To do this, place a roller under the lower back (area of physiological

lordosis). Simultaneously with the reposition, exercise therapy, massage and physiotherapy should be carried out. Careful care should be taken for the patient (prevention of pressure ulcers and congestive pneumonia), and the timely emptying of the bladder and intestines should be monitored. The victim should be monitored regularly by a neurologist.

Topic 10 “Fractures of the shin bones. Ilizarov's transosseous compression-distraction osteosynthesis in the treatment of fractures”

Exercise 1. Points for oral quiz:

1. Fractures of the ankles, damage to the ankle ligaments.
2. Diaphyseal fractures of the leg bones - diagnosis, treatment.
3. Diagnosis of sprains and injuries of the ankle ligaments.
4. Ankle fractures, diagnosis, treatment.
5. Treatment of leg fractures by the Ilizarov method.
6. Surgical treatment, methods of osteosynthesis of leg fractures.

Exercise 2. Test control:

1. To the basic principles of the method of compression-distraction osteosynthesis relate
 - a) exact reposition of fragments with reliable stabilization
 - b) preservation of blood supply and sources of reparative tissue regeneration
 - c) the possibility of a dosed effect (correction) on tissues
 - d) the possibility of early loading on the damaged segment
 - e) all of the above is correct
2. For conservative treatment of leg fractures with displacement of fragments skeletal traction is applied
 - a) for the heel bone
 - b) for the supra-ankle region
 - c) for the talus
 - d) correct a) and b)
3. Fractures of the leg bones without displacement of fragments require
 - a) the imposition of a split plaster cast
 - b) skeletal traction
 - c) the imposition of a compression-distraction apparatus
 - d) surgical treatment
 - e) functional treatment
4. The optimal method for the treatment of helical fractures of the shin bones with displacement of fragments is
 - a) plaster cast
 - b) skeletal traction + plaster cast
 - c) compression-distraction method
 - d) osteosynthesis operation
5. The optimal treatment for open fractures of the shin bones with displacement of fragments is
 - a) primary surgical treatment, fracture reduction, plaster cast
 - b) primary surgical treatment, the imposition of skeletal traction
 - c) osteosynthesis, if there is material and technical support, trained personnel
 - d) the imposition of a compression-distraction apparatus after initial surgical treatment
 - e) correct c) and d)

Topic 11 “Fractures of the lower limb. Damage to the knee joint, fractures of the shin bones. Diagnostics, treatment”

Exercise 1. Points for oral quiz:

1. Clinical picture, diagnosis and treatment of hip fractures.
2. Femoral shaft fractures, methods of treatment.
3. Fractures of the proximal end of the femur.
4. Treatment of hip fractures by the Ilizarov method.
5. Knee injury.
6. Patella fractures. Types of fractures, treatment.
7. Fractures of the ankles, damage to the ankle ligaments.
8. Fractures of the talus and calcaneus. Diagnostics and treatment
9. Foot injuries, fracture of the calcaneus. Diagnostics treatment.
10. Fractures of the metatarsal bones and phalanges of the fingers.

Exercise 2. Test control:

1. Directly at the neck of the fibula is located
 - a) tibial nerve
 - b) peroneal nerve
 - c) tibial and peroneal
 - d) femoral nerve
 - e) sciatic nerve

2. The main vessels and nerves of the popliteal fossa are
 - a) femoral artery, tibial and peroneal nerve
 - b) popliteal vein, tibial nerve, popliteal artery
 - c) tibial and peroneal nerves, popliteal vein
 - d) popliteal artery, popliteal vein, tibial and peroneal nerves

3. Damage to the patella's own ligament is manifested
 - a) dysfunction of flexion of the lower leg
 - b) loss of leg extension
 - c) acute pain on the front surface of the upper third of the leg, under the patella
 - d) instability of the knee joint
 - e) acute pain below the patella, impaired leg extension, a soft tissue defect between the patella and tuberosity of the tibia

4. Signs of a fracture of the calcaneus are
 - a) pain in the heel bone, flattening of the arch of the foot, deformity of the ankle, drooping of the tops of the ankles on the side of the calcaneus fracture
 - b) deformity of the ankle joint, upward displacement of the inner ankle
 - c) hemarthrosis of the ankle joint, flattening of the inner arch of the foot
 - d) pain in the area of the calcaneus, no deformation of the ankle

5. With conservative treatment of fractures of the leg bones with displacement of fragments skeletal traction is applied
 - a) for the heel bone
 - b) for the supra-ankle region
 - c) for the talus
 - d) correct a) and b)

Topic 12 "Traumatic brain injury. Peripheral nerve damage"

Exercise 1. Points for oral quiz:

1. Clinical forms of traumatic brain injury.
2. Brain concussion. Clinic, diagnostics, treatment.
3. Brain contusion. Clinic, diagnostics, treatment.
4. Fractures of the bones of the skull.
5. Complications of traumatic brain injury.
6. Diagnostic methods for craniocerebral trauma.
7. Damage to peripheral nerves. Clinic.

Exercise 2: Test control:

1. For cerebral hypotension syndrome with mild cerebral contusions all of the listed symptoms are characteristic, except
 - a) pallor of the skin with a slight cyanosis of the mucous membranes
 - b) bursting headaches
 - c) reducing headache when lowering the head
 - d) lowering blood pressure within 100/70 - 90/60 mm Hg. Art.
 - e) pressure in the spinal canal from 40 to 100 mm of water. Art.

2. Subarachnoid hemorrhage syndrome manifests itself with all of the listed symptoms, excluding
 - a) headache (as a "hoop tightens" the head)
 - b) headache, which is noticeably worse when the eyeballs move
 - c) a positive symptom of Brudzinsky
 - d) a possible manifestation of a delirious state
 - e) hemiparesis

3. For the clinical picture of subdural hematoma all of the following symptoms are characteristic, excluding
 - a) light gap
 - b) growing cerebral hypertension
 - c) bilateral pyramidal insufficiency
 - d) homolateral hemiparesis
 - e) displacement during the EchoEG study of the Me-echo to the healthy side

4. The universal response of the brain to trauma is
- subarachnoid hemorrhage
 - cerebral edema
 - hypersecretion of the ventricles of the brain
 - dislocation of the brain stem
 - brain collapse
5. The main clinical forms of brain damage from the listed are
- 1) concussion
 - 2) compression of the brain
 - 3) subarachnoid hemorrhage
 - 4) intracranial hematoma
 - 5) brain contusion
 - 6) cerebral edema
 - 7) brain prolapse
 - 8) dislocation of the brain
- correct 1, 3 and 8
 - correct 1, 2, 6 and 7
 - correct 1, 2 and 5
 - correct 1, 4, 5 and 6
 - correct 1, 2, 3 and 6

Topic 13 "Polytrauma"

Exercise 1. Points for oral quiz:

- Polytrauma: diagnostic methods.
- Types of fractures, morphological changes in the area of injury, general principles of treatment.
- Traumatic shock.
- Anti-shock measures for injuries.
- Methods of examination of patients with concomitant trauma.

Exercise 2: Test control:

- In acute multiple organ failure as a result of concomitant injury an urgent need to carry out the following activities, except
 - restoration of hemodynamics by infusion-transfusion therapy
 - carrying out artificial ventilation
 - stopping internal bleeding
 - carrying out surgical interventions for health reasons
 - stable fixation by performing osteosynthesis in fractures
- Fight against acute cardiovascular and respiratory failure start with all of the following activities, excluding
 - identifying the cause of acute respiratory failure
 - restoration and improvement of pulmonary ventilation and cardiovascular function
 - carrying out artificial ventilation
 - carrying out infusion-transfusion therapy
 - stabilization of damaged bone segments
- Combating respiratory failure at the prehospital stage consists primarily
 - in tracheal intubation
 - in the introduction of the oral or nasal airway
 - in intubation and assisted ventilation
 - in the toilet of the mouth, pharynx and larynx
 - in the introduction of respiratory analgesics
- In a set of measures to provide assistance to victims with multiple and associated injuries at the prehospital stage includes all of the following, except
 - assessing the severity of the victim's condition with the determination of the leading injury
 - stopping external bleeding and immobilization of the damaged segment
 - restoration and maintenance of cardiovascular functions and respiratory systems
 - blood transfusion therapy
 - fast transportation to a specialized hospital
- Emergency immobilization of long tubular bones in case of multiple and combined damages, it prevents the occurrence
 - shock

- b) fat embolism
- c) multiple organ failure
- d) a) and b) are true
- e) true b) and c)

Topic 14 "Injury in the ankle joint and foot, ankle fractures. Treatment and rehabilitation of trauma patients in the hospital"

Exercise 1. Points for oral quiz:

4. Fractures of the ankles, damage to the ankle ligaments.
5. Classification of ankle fractures.
6. Damage to the Achilles tendon. Etiology, clinic, diagnosis, treatment.
7. Fractures of the talus and calcaneus. Diagnostics and treatment
8. Foot injuries, fracture of the calcaneus. Diagnostics treatment.
9. Diagnosis of sprains and injuries of the ankle ligaments.
10. Fractures of the metatarsal bones and phalanges of the fingers.
11. Foot injuries, fracture of the calcaneus. Diagnostics treatment.

Exercise 2: Test control:

1. Signs of a fracture of the calcaneus are
 - a) pain in the heel bone, flattening of the arch of the foot, deformity of the ankle, drooping of the tops of the ankles, on the side of the calcaneus fracture
 - b) deformity of the ankle joint, upward displacement of the inner ankle
 - c) hemarthrosis of the ankle joint, flattening of the inner arch of the foot
 - d) pain in the area of the calcaneus, no deformation of the ankle
2. For fixation of the ankles after their reduction, it is shown
 - a) circular unlined plaster cast
 - b) circular plaster cast with cotton pad
 - c) a split circular bandage of the "boot" type
 - d) "U" -shaped bandage with a splint for the foot
 - e) "U" -shaped bandage without foot splint
3. With a fracture of the inner ankle X-rays of the lower leg in the upper third are taken to identify a fracture
 - a) the inner condyle of the tibia
 - b) the outer condyle of the tibia
 - c) the head of the fibula or its upper third
 - G) correct a) and b)
 - e) there is no correct answer
4. Signs of damage to the Achilles tendon are
 - a) sharp pain in the area of 1-5 toes
 - b) sharp pain in the area of the Achilles tendon
 - c) limitation of plantar extension, it is impossible to stand, walk on toes
 - d) the function of the limb is not impaired
 - e) diastasis at the site of tendon injury, tissue retraction on palpation, sharp pain in the Achilles tendon, limitation of plantar flexion of the foot and walking on toes is impossible
5. To the basic principles of the method of compression-distraction osteosynthesis relate
 - a) exact reposition of fragments with reliable stabilization
 - b) preservation of blood supply and sources of reparative tissue regeneration
 - c) the possibility of a dosed effect (correction) on tissues
 - d) the possibility of early loading on the damaged segment
 - e) all of the above is correct

Topic 15 "Degenerative - dystrophic diseases of the musculoskeletal system. Deforming arthrosis of large joints "

Exercise 1. Points for oral quiz:

1. Types of joints, anatomical and physiological features of diarthrosis joints (synovial membrane, synovial fluid, hyaline cartilage).
2. Deforming arthrosis of the knee joint.
3. Deforming arthrosis of the hip joint. Treatment
4. Etiology and pathogenesis of deforming arthrosis of large joints.

5. Methods for the treatment of deforming arthrosis, depending on the stage and nature of changes in the joints.
6. Surgical interventions for deforming arthrosis.
7. Arrototomy and meniscectomy. Features of the surgical intervention.
8. Basics of upper limb prosthetics.

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended publications: "Pediatric Traumatology, Orthopedics and Reconstructive Surgery", "Pirogov Bulletin on Traumatology and Orthopedics ", " Journal of Traumatology and Orthopedics of Russia ", "Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarov ".

Abstract topics:

1. Modern techniques of surgical treatment of deforming arthrosis.

Topic 16 "Bone tumors"

Exercise 1. Points for oral quiz:

1. Bone tumors. Classification
2. Osteosarcoma. Etiology, pathogenesis, clinical picture, diagnosis, treatment.

Exercise 2: Test control:

1. Malignant bone tumor:

- a) osteoid osteoma;
- b) osteochondroma;
- c) osteoblastoma;
- d) osteosarcoma;
- e) Pezdet's disease.

2. The first metastases of malignant bone tumors should be expected:

- a) in the liver;
- b) lymph nodes;
- c) lungs;
- d) the brain;
- e) bones.

3. Giant cell tumor histogenesis is associated with:

- a) with osteoblasts;
- b) osteoclasts;
- c) histiocytes;
- d) fibroblasts;
- e) epithelium.

Exercise 3: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended editions: the journal "Traumatology and Orthopedics. VD Chaklina", " Bulletin of traumatology and orthopedics named after Pirogov", the journal " Traumatology and Orthopedics of Russia".

Abstract topics:

1. Benign bone tumors and bone cysts.
2. Malignant bone tumors.
3. Surgical treatment of bone tumors.

Topic 17 "Treatment and rehabilitation of traumatological and orthopedic patients on an outpatient basis. Physiotherapy, physiotherapy "

Exercise 1. Points for oral quiz:

1. Outpatient and polyclinic care for trauma patients. Legal and regulatory framework.
2. Rehabilitation of trauma patients
3. Physiotherapy exercises for trauma patients
4. Methods of physiotherapeutic treatment of trauma patients
5. Indications and contraindications for physiotherapeutic treatment for trauma patients

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended editions: the journal "Traumatology and Orthopedics. VD Chaklina", "Bulletin of traumatology and orthopedics named after Pirogov", the journal "Traumatology and Orthopedics of Russia".

Abstract topics:

2. Rehabilitation of patients after total knee arthroplasty.
3. Rehabilitation of patients after total hip arthroplasty.

Topic 18 "Osteochondrosis of the spine"

Exercise 1. Points for oral quiz:

1. Spinal osteochondrosis: etiology, pathogenesis
2. Spinal osteochondrosis: diagnosis and treatment

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended editions: the journal "Traumatology and Orthopedics. VD Chaklina", "Bulletin of traumatology and orthopedics named after Pirogov", the journal "Traumatology and Orthopedics of Russia".

Abstract topics:

1. Osteochondrosis in trauma practice.

Topic 19 "Congenital dislocation of the hip"

Exercise 1. Points for oral quiz:

1. Congenital dislocation of the hip. Conservative treatment.
2. Congenital clubfoot and its treatment.
3. Congenital hip dislocation, early symptoms and treatment.
4. Clinical symptoms of congenital hip dislocation in children over one year old.

Exercise 2: Situational task:

Situational task

A girl, 4 years old, falls on her left leg. On examination: the limb is shortened. The greater trochanter is located 3 cm above the Roser-Nelaton line, slight atrophy of the muscles of the thigh and gluteal group, limited abduction of the thigh, a positive symptom of Trendelenburg. On the presented radiograph, the acetabulum is empty, shallow, the upper edge is smoothed. The femoral head is located in the supra-acetabular region. Neck-diaphasic angle is 140°.

Diagnose and treat.

STANDARD ANSWER: The child has a congenital dislocation of the left hip. Clinical signs: limb shortening, limitation of femoral abduction, high condition of the greater trochanter are confirmed by radiological symptoms: the acetabulum is empty and shallow, its upper edge is beveled, the femoral head is outside the cavity. Given the age, the doctor should prescribe an operative reduction of the hip with a deepening of the acetabulum.

Exercise 3: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended editions: the journal "Traumatology and Orthopedics. VD Chaklina", "Bulletin of traumatology and orthopedics named after Pirogov", the journal "Traumatology and Orthopedics of Russia".

Abstract topics:

1. Examination of children with congenital hip dislocation
2. Modern methods of treatment of congenital hip dislocation

Topic 20 "Congenital clubfoot, torticollis"

Exercise 1. Points for oral quiz:

1. Congenital clubfoot. Etiology, pathogenesis, diagnosis, treatment.
2. Congenital torticollis. Etiology, pathogenesis, diagnosis, treatment.

Exercise 2: Situational task:

Situational task

A 3-year-old child has congenital clubfoot. When trying to bring the foot out of the vicious position, the rigidity of the tissues along the posterior-inner edge of the foot is noted. What kind of intervention should be made to correct the deformity?

ANSWER STANDARD: It is possible to perform Zatselin's operation on the tendon-ligamentous apparatus of the foot, followed by wearing orthopedic shoes for a year.

Exercise 3: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended editions: the journal "Traumatology and Orthopedics. VD Chaklina", "Bulletin of traumatology and orthopedics named after Pirogov", the journal "Traumatology and Orthopedics of Russia".

Abstract topics:

1. Modern methods of treating congenital clubfoot
2. Modern methods of treatment of congenital torticollis

Topic 21 "Hereditary systems of skeletal disease. Dysplasia, chondrodystrophy. Treatment"

Exercise 1. Points for oral quiz:

1. Hereditary systems of skeletal disease
2. Dysplasia. Etiology, pathogenesis, clinical picture, diagnosis, treatment.
3. Chondrodystrophy. Etiology, pathogenesis, clinical picture, diagnosis, treatment.

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended publications: "Pediatric Traumatology, Orthopedics and Reconstructive Surgery", "Pirogov Bulletin on Traumatology and Orthopedics", "Journal of Traumatology and Orthopedics of Russia", "Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarov".

Abstract topics:

1. Surgical treatment of skeletal deformities in children with osteochondrodysplasia.
2. Spondyloepiphyseal dysplasia - theories of occurrence, principles of diagnosis.
3. Metaphyseal chondrodysplasias: their types, causes of occurrence, diagnostic features.
4. Exostous chondrodysplasias: classification, features of clinical and radiological diagnosis.
5. Ollier's disease: possible pathogenesis, clinical features and X-ray diagnostics.

Topic 22 "Osteochondropathies (Legg-Calve-Perthes disease, Osgood-Schlatter disease, Scheuermanmau's disease) and others"

Exercise 1. Points for oral quiz:

1. Osteochondropathy II - III metatarsal bones (Keller disease II)
2. Osteochondropathy of the vertebrae - Scheuermann's disease - Mau. Diagnostics, treatment
3. Osteochondropathy of the tibial tuberosity (Osgood - Schlatter)
4. Osteochondropathy of the femoral head (Legg-Calve-Perthes disease).
5. Osteochondropathy pathomorphology on the example of Perthes disease

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended publications: "Pediatric Traumatology, Orthopedics and Reconstructive Surgery", "Pirogov Bulletin on Traumatology and Orthopedics", "Journal of Traumatology and Orthopedics of Russia", "Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarov".

Abstract topics:

1. Diagnosis and treatment of children with Perthes disease
2. Complex treatment of children with osteochondropathy

Topic 23 "Scoliotic disease"

Exercise 1. Points for oral quiz:

1. Modern view of the etiology and pathogenesis of scoliotic disease
2. Scoliosis. Stages. Diagnostic methods.
3. Static deformities - kyphosis, scoliosis (diagnosis, treatment)
4. Scoliosis. Prevention and Treatment.
5. Scoliosis. Etiology and treatment.

Exercise 2: Test control:

1. By what method is the angle of curvature of the spinal column determined?

A. Pavlov's method

B. all answers are not correct

- B. Petty method
- G. Kocher's method
- 2. Diagnostic method for scoliosis?
 - A. ultrasound
 - B. EMG
 - B. EEG
 - G.KT
 - D. EchoEG
- 3. IV degree of scoliosis according to Chaklin?
 - A. 10-15 ° deflection
 - B. 25-40 ° deflection
 - B. more than 40 ° deflection
 - D. 10-25 ° deflection
 - D. all answers are correct
- 4. What are the forms of scoliosis?
 - A. congenital, neurogenic, static
 - B. traumatic
 - B. dysplastic
 - G. paralytic
- 5. How many Chaklin scoliosis grades are there?
 - A. 5 degrees
 - B. 2 degrees
 - B. 3 degrees
 - G. 4 degrees
 - D. all answers are correct

Exercise 3: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended publications: "Pediatric Traumatology, Orthopedics and Reconstructive Surgery", "Pirogov Bulletin on Traumatology and Orthopedics ", " Journal of Traumatology and Orthopedics of Russia ", "Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarov ".

Abstract topics:

1. Scoliotic disease as a problem of modern schoolchildren. The reasons for the development of the disease. Prevention. Correction methods.
2. Application of modern technologies to strengthen the back muscles in children with grade I scoliosis.
3. Methods for treating scoliosis in children.

Topic 24 "Central paralysis of children"

Exercise 1. Points for oral quiz:

1. Modern view of the etiology and pathogenesis of infantile cerebral palsy.
2. Etiology, clinic of cerebral spastic palsy.
3. Modern methods of treatment and maintenance therapy of infantile cerebral palsy.

Exercise 2: Abstract

Each student chooses 2-3 scientific journals with related topics from the funds of the Scientific Library of SURSU (a set of issues for the last 2-3 years) and reviews publications, compiles an analytical review of the most popular topics and research methods used. Recommended publications: "Pediatric Traumatology, Orthopedics and Reconstructive Surgery", "Pirogov Bulletin on Traumatology and Orthopedics ", " Journal of Traumatology and Orthopedics of Russia ", "Genius of Orthopedics - Journal of Clinical and Experimental Orthopedics named after G.A. Ilizarov ".

Abstract topics:

1. Modern ideas about the morphological basis of infantile cerebral palsy.
2. Cerebral palsy: concept, etiology, symptoms
3. Features of examination, examination and treatment of patients with cerebral palsy.
4. The problem of rehabilitation treatment of infantile cerebral palsy.
5. Rehabilitation for cerebral palsy.

Stage: Midterm assessment (exam)

Midterm assessment is carried out in the form of exam. Tasks for the exam include two theoretical points, case-study task and demonstration of practical skills with the use of the simulator.

Tasks for competence assessment «Knowledge»	Task type
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List of theoretical points

1. *Survey methods in traumatology.*
2. *Bone fractures.*
3. *Types of fractures, morphological changes in the area of injury, general principles of treatment.*
4. *Determination of the quality of gypsum.*
5. *Basic rules for applying plaster casts.*
6. *Plaster casts for injuries of the upper limb.*
7. *Plaster bandages for injuries of the lower limb.*
8. *Features of the course of the reproduction process in bone fractures and the effect of mechanical factors on bone formation.*
9. *Classification of blood vessel injuries.*
10. *Methods for diagnosing damage to blood vessels.*
11. *treatment of damage to blood vessels.*
12. *Traumatic shock.*
13. *Rehabilitation of patients with blood vessel damage.*
14. *Anti-shock measures for injuries.*
15. *Methods of examination of orthopedic patients.*
16. *Clinical forms of traumatic brain injury.*
17. *Brain concussion*
18. *Rib fractures. Treatment of rib fractures.*
19. *Fractures of the scapula. Classification, clinic, treatment.*
20. *Fracture-dislocation of the forearm bones (Monteggi and Galiazi) - diagnosis and treatment.*
21. *Fracture of the olecranon. Treatment methods.*
22. *Dislocations of the forearm, mechanism of occurrence, methods of reduction*
23. *Diaphyseal fractures of the humerus. The advantage of the Ilizarov method in the treatment of fractures of this localization.*
24. *Shoulder injury. Fracture of the surgical neck of the shoulder.*
25. *Fractures of the proximal humerus.*
26. *Forearm fractures: diagnosis and treatment.*
27. *Diaphyseal fractures of the forearm bones. Conservative and surgical treatment.*
28. *Radial fractures in a typical location: clinical presentation, diagnosis and treatment.*
29. *Fracture of the wrist bones of the 1st navicular bone: mechanism, clinical picture, treatment.*
30. *Metacarpal fractures, treatment method.*
31. *Dislocations and fractures of the fingers.*
32. *Traumatic dislocation of the hip.*
33. *Clinical picture, diagnosis and treatment of hip fractures.*
34. *Femoral shaft fractures, methods of treatment.*
35. *Fractures of the pelvic bones. Mechanisms of injury. Treatment.*
36. *Patella fractures. Types of fractures, treatment.*
37. *Fractures of the ankles, damage to the ankle ligaments.*
38. *Dislocations of the shoulder.*
39. *Traumatic dislocations of the shoulder: classification, clinic, methods of reduction.*
40. *Diaphyseal fractures of the leg bones - diagnosis, treatment.*
41. *Damage to the knee joint menisci (diagnosis for fresh and old injuries)*
42. *Fractures of the talus and calcaneus. Diagnostics and treatment*
43. *Foot injuries, fracture of the calcaneus. Diagnostics treatment.*
44. *Diagnosis of sprains and injuries of the ankle ligaments.*
45. *Ankle fractures, diagnosis, treatment.*
46. *Fractures of the metatarsal bones and phalanges of the fingers.*
47. *Foot injuries, fracture of the calcaneus. Diagnostics treatment.*
48. *Talus fractures, diagnosis and treatment.*
49. *Features of tendon restoration, types of tendon sutures*
50. *Fractures of the proximal end of the femur.*
51. *Fractures of the vertebral bodies: clinical picture, diagnosis and treatment*
52. *Clavicle fractures. Diagnostics, treatment.*
53. *Clinical symptoms of congenital hip dislocation in children over one year old.*
54. *Osteochondropathy II - III metatarsal bones (Keller disease II)*
55. *Osteochondropathy of the vertebrae - Scheuermann's disease - Mau. Diagnostics, treatment*

-theoretical

<p>56. Osteochondropathy of the tibial tuberosity (Osgood - Schlatter)</p> <p>57. Osteochondropathy of the femoral head (Legg-Calve-Perthes disease).</p> <p>58. Osteochondropathy pathomorphology on the example of Perthes disease</p> <p>59. Muscular torticollis: diagnosis, treatment.</p> <p>60. Treatment of degenerative and atrophic processes in the bones.</p> <p>61. Modern view of the etiology and pathogenesis of dysplasia</p> <p>62. Congenital dislocation of the hip. Conservative treatment.</p> <p>63. Congenital clubfoot and its treatment.</p> <p>64. Congenital hip dislocation, early symptoms and treatment.</p> <p>65. Static deformities - kyphosis, scoliosis (diagnosis, treatment)</p> <p>66. Scoliosis. Prevention and Treatment.</p> <p>67. Scoliosis. Etiology and treatment.</p> <p>68. Flat feet, valgus deviation of the first toe, clinic, treatment</p> <p>69. Osteochondrosis of the spine: etiology, pathogenesis, diagnosis and treatment.</p> <p>70. Deforming arthrosis of the knee joint.</p> <p>71. Deforming arthrosis of the hip joint. Treatment</p> <p>72. Congenital torticollis</p> <p>73. Intra-articular fractures of the knee joint.</p> <p>74. Fractures of the scapula, clavicle. Diagnostics and treatment.</p> <p>75. Types of flat feet. Treatment.</p> <p>76. Osteosarcoma.</p> <p>77. Etiology, clinic of cerebral spastic palsy.</p>	
<p>Tasks for competence assessment «Abilities»</p>	<p>Task type</p>
<p>Case-study</p> <p>1. A 36-year-old man, driving a car, collided with a truck at night on the highway. As a result of the collision, he was pressed tightly against the seat by the steering wheel. People who happened to be nearby tried to remove the driver from the car. Their inept and hasty actions led to severe spinal injury. The victim was taken to the spinal center of the hospital. Burning pains in the thoracic spine disturb. Objectively: the movements in the spine are constrained. In the lower thoracic spine, swelling, subcutaneous hematoma, increased thoracic kyphosis. The standing of the spinous processes of the X-XI thoracic vertebrae is noted. Palpation of the spinous processes at the level of damage is painful. The motor and sensory functions of the legs are absent. The function of the pelvic organs is impaired.</p> <p>What is your diagnosis? What additional research needs to be done? What is the treatment tactics?</p> <p>ANSWER STANDARD: Closed compression fracture of the bodies of the X-XI thoracic vertebrae with a complete rupture of the spinal cord.</p> <p>It is necessary to do an x-ray examination of the spine, magnetic resonance imaging, lumbar puncture with examination of the cerebrospinal fluid. Lay the patient on his back on a bed with a shield and a hard mattress. Perform a gradual reposition of the damaged vertebrae. To do this, place a roller under the lower back (area of physiological lordosis). Simultaneously with the reposition, exercise therapy, massage and physiotherapy should be carried out. Careful care should be taken for the patient (prevention of pressure ulcers and congestive pneumonia), and the timely emptying of the bladder and intestines should be monitored. The victim should be monitored regularly by a neurologist.</p> <p>2. A young woman walked on a log and, amused, tossed a 4-year-old child in her arms. With a careless movement, the child fell off his hands and hit his back on a log. The mother did not ask for qualified help with the child. Only six months later, the boy was taken to a specialized medical institution. The child is worried about constant pain in the area of injury. He has poor sleep, decreased appetite. Movement in the lumbosacral spine is limited. The child cannot stand straight for a long time, but is forced to rest his hands on his hips. On external examination, attention is drawn to the protrusion of the spinous processes of the III, IV and V lumbar vertebrae, which formed the gibbus. When tapping with fingers on the spinous processes of these vertebrae, pain is noted. Pain in the lumbar spine when pressing with the palm of the hand on the head. Sensory and motor functions in both lower extremities are fully preserved.</p> <p>What is your diagnosis? What additional research needs to be done? What is the treatment tactics?</p> <p>ANSWER STANDARD: Tuberculous spondylitis of the III, IV and V lumbar vertebrae. It is necessary to make an X-ray of the lumbosacral spine, magnetic resonance imaging, laboratory tests. The child should be recommended a long-term strict bed rest in a sanatorium-resort environment, including the use of air and sun baths</p>	<p>-practical</p>

(aerogelotherapy). The affected spine must be kept at rest with a plaster bed. To correct the deformation and prevent an increase in the hump, put a dense cotton-gauze roller in the form of a cross under it. Prescribe tuberculostatic drugs. Later - radical necrectomy of the lumbar vertebrae affected by the tuberculous process.

3. An 82-year-old woman lifted a 20-liter pot filled with liquid from the floor and placed it on the gas stove. At the moment of raising the pan, something cracked in her spine "somewhere below the shoulder blades" and severe pains appeared in the area of the injury. She did not seek medical help, she rubbed her back with turpentine on her own and lay on her back. The acute events have passed. Two days later, I stood outside for a long time in cold weather. I got very cold. I came home, could not get warm for a long time. Pain in the lower thoracic spine reappeared. I turned to a local therapist. Was diagnosed with sciatica lumbosacral. Rubbing was prescribed. The patient followed the instructions carefully, but her condition gradually worsened. Disturbed by constant pain in the spine when walking, which stopped only in the supine position. Walking gave her great torment. This went on for 9 months. Finally, at the insistence of her relatives, she underwent an X-ray examination of the spine, after which she was hospitalized in a tuberculosis dispensary. On external examination of the lower thoracic spine, there is a noticeable protrusion of the spinous processes of the IX and X thoracic vertebrae. Beating your fingers along the spinous processes of these vertebrae is painful. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired. On external examination of the lower thoracic spine, there is a noticeable protrusion of the spinous processes of the IX and X thoracic vertebrae. Beating your fingers along the spinous processes of these vertebrae is painful. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired. On external examination of the lower thoracic spine, there is a noticeable protrusion of the spinous processes of the IX and X thoracic vertebrae. Beating your fingers along the spinous processes of these vertebrae is painful. Movement in the lower thoracic spine is limited. Sensitivity and motor function of the lower extremities in full. The function of the pelvic organs is not impaired. What is the diagnosis? What additional research needs to be done? What treatment should be prescribed?

ANSWER STANDARD: To make an X-ray of the thoracic spine, magnetic resonance imaging, laboratory tests. Taking into account the elderly age of the patient, to carry out conservative treatment with the use of tuberculostatic drugs. Lay the patient on a bed with a shield and a hard mattress. Prescribe strict bed rest with careful, personalized care

METHODOLOGICAL GUIDELINES FOR LEARNING OUTCOMES ASSESSMENT

Stage: Formative assessment

Formative assessment is a regular checking of student academic progress during the academic term. It is performed in various oral and written forms (quizzes, essays, checking of home assignments, compilation of cases, self-study, colloquiums, and testing). During formative assessment, the teacher monitors the level of student's academic progress according to the curriculum identifying lack of knowledge, or misunderstanding.

The tasks of formative assessment are aligned with the Curriculum and Syllabus.

1. Guidelines for assessing the oral quiz:

In assessing the teacher takes into account:

- knowledge and understanding of the subject matter;
- activity during the class;
- consistency of presentation;
- argumentation of the answer, the level of independent thinking;
- ability to link theoretical and practical principles with future professional activity.

Assessment criteria:

The results are assessed in a four-grading scale: "excellent", "good", "satisfactory", "unsatisfactory".

Type of the task	Assessed competences	Assessment criteria	Grade
Oral quiz	PC-1.1 PC-1.2	The student demonstrates a comprehensive, systematic and in-depth	Excellent

	PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	knowledge of the academic material; has learned the required and additional resources. The student demonstrates a consistent and thorough understanding of the required knowledge, concepts, skills of the material learned, and their significance for future profession.	
		The student demonstrates a comprehensive knowledge of the academic material; has learned the required and additional resources. The student demonstrates a consistent understanding of the required knowledge, concepts, skills of the material learned, but makes minor errors.	Good
		The student demonstrates basic knowledge necessary for further study; has learned basic recommended literature. The student operates with inaccurate formulating, has difficulties in the independent answers, makes significant mistakes but is able to correct them under the guidance of a teacher.	Satisfactory
		The student does not know the obligatory minimum or demonstrates gaps in knowledge of the academic material, makes major mistakes or gives completely wrong answers.	Unsatisfactory

2. Guidelines for case-study assessment:

Assessment criteria:

The results are assessed in a four-grading scale: “excellent”, “good”, “satisfactory”, “unsatisfactory”.

Type of the task	Assessed competences	Assessment criteria	Grade
Case - study	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student correctly and solves the case-study task, demonstrating deep knowledge. There are no errors in logical reasoning and solution, the problem is solved in a rational way. The right answer is obtained, ways are clearly described.	Excellent
		The student correctly solves the case-study task, demonstrating deep knowledge. There are minor errors in logical reasoning and solution, the problem is solved in a rational way. The right answer is obtained, ways are clearly described.	Good
		The student correctly solves the case-study task, demonstrating basic knowledge. There are significant errors in logical reasoning and solution. The student demonstrates difficulties, but still is able to solve a case-study task.	Satisfactory
		The student incorrectly solves the case-study task, makes significant mistakes. The student is not able to solve a case-study.	Unsatisfactory

3. Guidelines for test assessment.

Assessment criteria:

The results are assessed in a four-grading scale: “excellent”, “good”, “satisfactory”, “unsatisfactory”.

Type of the task	Assessed competences	Assessment criteria	Grade
Test	PC-1.1	80 – 100%	Excellent
	PC-1.2	66 – 80%	Good
	PC-3.1	46 – 65%	Satisfactory
	PC-3.2	Less Than 46%	Unsatisfactory
	PC- 3.3		
PC-3.4			
PC-5.1			
PC-5.2			
PC-5.4			
PC-8.2			

4. Guidelines for the assessment of practical skills:

Assessment of practical skills based on simulation or participation of third parties may include a demonstration of manipulation, response to the questions of the task;

- assessment of practical skills at the bedside may include a demonstration of detection and / or interpretation of signs, symptoms, methods of examination and treatment;

-the task may include a brief introduction, questions, and list of practical skills for demonstration (according to Curriculum).

In assessing the teacher takes into account:

- knowledge and understanding of the subject matter;
- ability to apply theoretical knowledge into practice;
- the level of formed practical skills;
- reasoning and response style;
- rationale for data selection, additional tests, differential diagnosis and/or choice of treatment, level of clinical thinking.

Assessment criteria:

The results are assessed in a four-grading scale: “excellent”, “good”, “satisfactory”, “unsatisfactory”.

Type of the task	Assessed competences	Assessment criteria	Grade
Practical skills	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student correctly demonstrates practical skills on the model with a deep knowledge of the material. There are no mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Excellent
		The student demonstrates practical skills on the model with slight inaccuracies. There are insignificant mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Good
		The student demonstrates practical skills on the model with inaccuracies. There are significant mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Satisfactory
		The student demonstrates	Unsatisfactory

		practical skills on the model with significant mistakes. The indications and conditions used in this method are not described.	
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5. Guidelines for the case history assessment:

In assessing the teacher takes into account:

1. knowledge and understanding of the subject matter;
2. compliance of the case history with the methodological requirements of the department;
3. literacy, logic, and style of writing;
4. reasoning and interpretation of additional survey data;
5. differential diagnosis and/or its rationale, choice of treatment, practical recommendations;
6. level of independent thinking;
7. ability to link theory and practice.

The criteria for case history assessment:

1. The subjective examination of the patient (complaints, anamnesis).
2. The objective examination of the patient.
3. Planning and interpreting additional methods of examination.
4. Differential diagnosis, clinical diagnosis, its rationale.
5. Purpose of treatment.
6. Epicrisis.

Assessment criteria:

The results are assessed in a four-grading scale: “excellent”, “good”, “satisfactory”, “unsatisfactory”.

Type of the task	Assessed competences	Assessment criteria	Grade
Case history		The student demonstrates a comprehensive, systematic and deep knowledge of material, the ability to gather complaints, anamnesis, to conduct an objective examination of the patient, to assign additional methods of examination for this pathology, to conduct a differential diagnosis and make diagnosis, prescribe treatment in accordance with modern concepts of medical science, use the main and additional literature.	Excellent
	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student demonstrates a comprehensive and systematic knowledge of material, the ability to gather complaints, anamnesis, to conduct an objective examination of the patient, to assign additional methods of examination for this pathology, to conduct a differential diagnosis and make diagnosis, prescribe treatment in accordance with modern concepts of medical science, use the main and additional literature. The student makes single mistakes in medical terminology, single stylistic mistakes and inconsistencies in the text, inaccuracies of subjective or objective examination of the patient. The student demonstrates insufficient ability to use the data of objective examination in the formulation and solving therapeutic and diagnostic problems.	Good
		The student demonstrates a basic knowledge required for further study, the ability to gather complaints, anamnesis, to conduct an objective examination of the patient, to assign additional methods of examination for this pathology, to conduct a differential diagnosis and make diagnosis, prescribe treatment in accordance with modern concepts of medical science, use the main and additional literature. The student makes multiple mistakes in medical terminology, multiple stylistic mistakes and inconsistencies in the text, errors	Satisfactory

		of subjective or objective examination of the patient. The student demonstrates insufficient ability to use the data of objective examination in the formulation and solving therapeutic and diagnostic problems, but has abilities to eliminate the mistakes under the guidance of a teacher.	
		The student has significant gaps in knowledge of the basic material, has made fundamental mistakes in examining a patient, is not able to make a differential diagnosis, assign diagnostic and therapeutic measures for the pathology.	Unsatisfactory

6. Essay requirements:

1) Volume: 1500-300 words,

2) Contents structure:

- Introduction
 - prove the relevance of the chosen topic
 - point out the purpose of the essay
 - give a summary of the main points
- Body
 - use information obtained from different sources during the research
 - show inaccuracy of the opposite points of view
- Conclusion
- List of references

The essay assumes usage of several specialized sources (at least 8-10 publications, monographs, the reference media, manuals). Preference is given to the publications in specialized medical journal and monographs including foreign databases.

Assessment criteria:

The results are assessed in a four-grading scale: “excellent”, “good”, “satisfactory”, “unsatisfactory”.

Type of the task	Assessed competences	Assessment criteria	Grade
Essay	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The requirements are fulfilled: - the problem is formulated and its relevance is proved; - the various approaches to problem are presented; - conclusions are formulated; - the subject is thoroughly studied; - volume is observed; - design requirements are observed; - correct answers to additional questions are given.	Excellent
		The main are fulfilled with some mistakes: - inaccuracies in material statement; - no logical sequence in judgments; - volume is not observed; - errors in design requirements; - incomplete answers are given to additional questions in the process of defence.	Good
		There are significant deviations from requirements: - topic is only partially explored; - mistakes in contents of the paper; - mistakes in answers to additional questions; - no conclusion is given at the process of defence.	Satisfactory
		The essay is not prepared at all.	Unsatisfactory

		The subject of the essay is not explored, significant misunderstanding of a topic.	
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Stage: midterm assessment (examination)

Methodological guidelines for summative assessment (examination)

Examination is held in the oral form and includes several stages:

- oral answer (the card includes two questions);
- case-study task;
- demonstration of practical skills with the use of the simulator.

Requirements for the student:

- 1) regularly attend classes; the absence from classes is not allowed without good reason;
- 2) in case of absence from classes the student has to work out passed classes;
- 3) the student has to hand over written papers on time;
- 4) the student has successfully passed all colloquiums provided by the plan;
- 5) in case the student has been negatively assessed on the colloquium, he/she should try to pass it again;
- 6) during the test week the student has to hand over all the tasks (clinical case).

The students are allowed to take examinations in case of all the tests passed and no academic debts (on the basis of the academic records).

The students are not allowed to take examination:

- with unpassed tests on the discipline;
- with missed classes, debts on the discipline;
- with 5 (five) and more debts for the previous term;
- with one debt for earlier terms for more than a year.

Recommendations for the examination assessment:

Type of the task	Assessed competences	Assessment criteria	Grade
Oral answer	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student demonstrates comprehensive, systematic and profound knowledge of the subject, can independently perform the tasks provided by the program; who has a good knowledge of the main literature and familiar with the additional literature recommended by the program; demonstrates creative abilities in understanding, statement and use of material of the studied discipline, faultlessly answers not only questions of the card, but also additional questions within the main program, correctly performs a practical task.	Excellent
		The student has good knowledge of material of the studied discipline; can successfully perform the tasks provided by the program; has a good knowledge of the main literature recommended by the program; answers all questions of the card, correctly performs a practical task, but makes some mistakes.	Good
		The student demonstrates knowledge of material for further study; can cope with the tasks provided by the program; familiar with the main recommended literature; makes mistakes when performing examination tasks, but has necessary knowledge for their elimination under the supervision of the teacher.	Satisfactory

		The student demonstrates poor knowledge of the material, makes significant mistakes in performance of the tasks provided by the program.	Unsatisfactory
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Type of the task	Assessed competences	Assessment criteria	Grade
Case - study	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC-3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student correctly and fully solves the case-study task, demonstrating deep knowledge. There are no errors in logical reasoning and solution, the problem is solved in a rational way. The right answer is obtained, ways are clearly described.	Excellent
		The student correctly solves the case-study task, demonstrating deep knowledge. There are minor errors in logical reasoning and solution, the problem is solved in a rational way. The right answer is obtained, ways are clearly described.	Good
		The student correctly solves the case-study task, demonstrating basic knowledge. There are significant errors in logical reasoning and solution. The student demonstrates difficulties, but still is able to solve a case-study task.	Satisfactory
		The student incorrectly solves the case-study task, makes significant mistakes answering most of the questions of the case-study. The student is not able to solve a case-study.	Unsatisfactory

Type of the task	Assessed competences	Assessment criteria	Grade
Practical skills	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC-3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	The student correctly demonstrates practical skills on the model with a deep knowledge of the material. There are no mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Excellent
		The student demonstrates practical skills on the model with slight inaccuracies. There are insignificant mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Good
		The student demonstrates practical skills on the model with inaccuracies. There are significant mistakes in the demonstration and the used technique. The indications and conditions used in this method are clearly described.	Satisfactory
		The student demonstrates practical skills on the model with significant mistakes. The indications and conditions used in this method are not described.	Unsatisfactory

Chart of the examination grade:

Tasks	Assessed competences	Grade	Score
Theoretical point № 1 (Oral answer)	PC-1.1	Excellent	5
	PC-1.2	Good	4

	PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	Satisfactory	3
		Unsatisfactory	2
Theoretical point № 2 (Oral answer)	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	Excellent	5
		Good	4
		Satisfactory	3
		Unsatisfactory	2
Practical task (case studies)	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	Excellent	5
		Good	4
		Satisfactory	3
		Unsatisfactory	2
Practical task (case studies)	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	Excellent	5
		Good	4
		Satisfactory	3
		Unsatisfactory	2
Total	PC-1.1 PC-1.2 PC-3.1 PC-3.2 PC- 3.3 PC-3.4 PC-5.1 PC-5.2 PC-5.4 PC-8.2	Excellent	18-20
		Good	15-17
		Satisfactory	11-14
		Unsatisfactory	8-10