

<i>Course name</i>	<b>Diseases and injuries of the locomotor system</b>			<b>Course code</b>	
<i>Study program Study cycle</i>	Integrated university study, medicine			<b>Year of study</b>	V
<i>ECTS credits:</i>	<b>9</b>	<i>Semester</i>	X	Teaching hours per semester (l+e+s)	90 (35+30+65)
<i>Course status:</i>	mandatory	<i>Preconditions:</i>	Passed all exams of the 4th year	<i>Comparative conditions:</i>	
<i>Access to the course:</i>	5 <sup>th</sup> year medical students			<i>Hours of instructions:</i>	According to schedule
<i>Head of the course:</i>	Professor Zdenko Ostojić, MD, PhD				
<i>Consultations:</i>	As agreed				
<i>E-mail and phone no.:</i>	zdenkoostojic54@gmail.com				
<i>Associate teachers</i>	Professor Božo Ljubić, MD, PhD Professor Ljerka Ostojić, MD, PhD Assistant professor Jerko Prlić, MD, PhD Goran Moro, MD, PhD Kristijan Juka, MD, PhD Maki Grle, MD, PhD Alen Latinčić, MD Assistant professor Mladenka Naletilić, MD, PhD Assistant professor Vesna Damjanović, MD, PhD Jelena Soldo, MD, MSc Meliha Čeremida Dragišić, MD, MSc				
<i>Consultations:</i>					
<i>E-mail and phone no.:</i>					
<b><i>The aims of the course:</i></b>	<p>The aims of the course are:</p> <p>To enable students to acquire knowledge about congenital and developmental diseases of the locomotor system, inflammatory and degenerative diseases, circulatory diseases, tumors, injuries, amputations and prosthetics, joint arthroplasty.</p> <p>Orthopedic surgery classes enable students to acquire the knowledge and skills required to manage orthopedic disorders in scope of a primary health care physician.</p> <p>The classes cover the knowledge in basic medical subjects with emphasis on functional anatomy of the locomotor system.</p> <p>Furthermore, they cover the acquired knowledge in clinical subjects, especially internal medicine with emphasis on clinical immunology and rheumatology, neurology and partly paediatrics including clinical</p>				

	<p>genetics.</p> <p>Physical medicine and rehabilitation classes enable students to master the basic methods of thermo-, electro-, hydro-, and kinesiotherapy as a part of multidisciplinary approach in healing acute and chronic inflammatory and degenerative diseases.</p> <p>Students will get to know the problems of complex principles of habilitation/rehabilitation of children with neuromotor impairment as well as the fundamentals of basic kinesiotherapy methods in early age.</p>			
<p><b>Learning outcomes (general and specific competences):</b></p>	<p><u>General outcomes:</u></p> <ul style="list-style-type: none"> <li>• Applying the independent learning through the study in the way of critical and self-critical questioning of scientific truth.</li> <li>• Remembering the possession of personal qualities such as teamwork and personal contribution to it, attentiveness, active listening and positive teambuilding.</li> </ul> <p><u>Specific outcomes:</u></p> <ul style="list-style-type: none"> <li>• Understanding the basics of orthopedic diseases as well as injuries, ethiology, clinical features, diagnostics and treatment of orthopedic patients.</li> <li>• Applying the most important skills in diagnostic and therapeutic procedures.</li> <li>• Understanding the diagnostics, treatment, rehabilitation and resocialisation of patients with diseases and injuries of the locomotor system in scope of a primary care physician.</li> <li>• Applying the preventive measures in a timely manner.</li> </ul> <p>The outcomes are in line with the Catalogue of Knowledge and Clinical Skills. Performance will be evaluated through continuous tests, active forms of studying during lectures and seminars, and in final exam.</p>			
<p><b>Syllabus / curriculum contents (short):</b></p>	<p>The course consists of everyday lectures, seminars and exercises. The same topics with a different approach are covered in lectures and seminars. A seminar is an interactive method of teaching. Students apply the acquired knowledge during exercises.</p>			
<p><b>Methods of teaching (mark in bold)</b></p>	<p><b>Lectures</b></p>	<p><b>Exercises</b></p>	<p><b>Seminars</b></p>	<p>Individual assignments</p>
	<p>Consultations</p>	<p>Mentoring</p>	<p>Field work</p>	<p>Other</p>
	<p>Remarks:</p>			
<p><b>Student responsibilities</b></p>	<p>Students are required to attend classes on schedule. Any absence has to be compensated with colloquium. Running late for a class will be treated</p>			

	<p>same as missing it. Colloquium is a short oral exam in which student has to demonstrate basic knowledge of the material.</p> <p>During the exercises students are required to wear clean and ironed white coats.</p> <p>Students with long hair are required to tie it back in a ponytail. Nails have to be neatly trimmed.</p> <p>Students are required to study the seminar materials in advance.</p>			
<b>Monitoring and assessment (mark in bold)</b>	Class attendance	Class participations	Seminar assignment	Practical training
	<b>Oral exam</b>	<b>Written exam</b>	<b>Continuous assessment</b>	Essay
<b>Detailed evaluation</b> within a <i>European point system</i>				
<b>STUDENTS RESPONSIBILITIES</b>	<b>HOURS (APPROX.)</b>	<b>ECTS CONTRIBUTION</b>	<b>MARK CONTRIBUTION</b>	
Class attendance and participation	30	1	0%	
Seminar essay	0	0	0%	
Colloquium (2) or Written exam	120	4	50%	
Oral exam	120	4	50%	
<p>Further clarification:</p> <p>The exam in <i>Diseases and injuries of the locomotor system</i> consists of three parts: written, practical and oral exam.</p> <p>Written exam consists of 40 multiple-choice questions and 10 diagnosis in latin in Orthopedics and traumatology and 20 multiple choice questions in Physical and rehabilitation medicine with 5 offered answers of which only one is correct.</p> <p>Based on the number of correct answers the exam is graded as following:</p> <p>Orthopedics and traumatology:</p> <p>45-50 points = grade 5  40-44 points = grade 4  35-39 points = grade 3  30-34 points = grade 2</p> <p>Physical and rehabilitation medicine:</p> <p>18-20 points = grade 5  16-17 points = grade 4  14-15 points = grade 3  12-13 points = grade 2</p>				

Once passed, the written exam is valid throughout the full academic year and that part of the course won't have to be retaken.

In the practical exam, student is assigned one patient at the Orthopedic surgery clinic and another patient at the Physical medicine and rehabilitation clinic. The student has to examine both patients and suggest treatments. The practical exam is graded either as a pass or fail.

Oral exam follows the passed practical exam. In an oral exam student draws 4 cards with questions divided in the same number of categories. Student needs to demonstrate the basic knowledge in all drawn topics in order to pass the exam.

The final grade is the average of grades achieved in written and oral exams in Orthopedics and Physical medicine.

Students are able to take the exam in regular summer and autumn exam periods.

According to the *Study regulations*, the final exam is graded as following:

A = 90-100% 5 (excellent)

B = 80 to 89% 4 (very good)

C = 70 to 79% 3 (good)

D = 60 to 69% 2 (pass)

F = 0 to 59% 1 (fail)

<b><i>Required literature:</i></b>	Pećina M. et al.: Ortopedija, Medicinska biblioteka, Zagreb, 2004 Smiljanić B: Traumatologija, Školska knjiga, Zagreb Jajić I. et al.: Fizikalna medicina, Medicinska knjiga, Zagreb, 1996. Ćurković B. et al.: Fizikalna i rehabilitacijska medicina, Medicinska naklada, Zagreb, 2003
<b><i>Optional literature:</i></b>	Babić Naglič Đ. Fizikalna i rehabilitacijska medicina, Medicinska naklada, Zagreb, 2013 Canale et Al. et al.: Campbell's Operative Orthopaedics, Elsevier, 2016
<b><i>Additional information about the course</i></b>	Monitoring methods of teaching quality: - student questionnaire - quality analysis by students and teachers - exam results analysis - report of the office for teaching quality - external evaluation (visit of team for quality control)

ANEXES: Calendar Classes

<b>Teaching unit number</b>	<b>TOPICS AND LITERATURE</b>
<b>I.</b>	<p>Title: Introduction – orthopedics through history, morphology and function of LMS, clinical features and methods of treatment.                      Orthopedic procedures in general (conservative and surgical).                      Orthopedic examination, radiology diagnostics.                      Working at the clinic and department.                      Working in the operating room.</p> <p>Short description: Class organization, orthopedic service organization, general terms.</p> <p>Literature: required and optional</p>
<b>II.</b>	<p>Title: General disorders of the skeletal system.                      Bone displasions – achondroplasia, mucopolysaccharidosis, osteogenesis imperfecta, arthrogryposis, metabolic and hormonal diseases – osteoporosis, Paget disease, gout, rickets.</p> <p>Short description: Clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>III.</b>	<p>Title: Juvenile osteochondrosis, bone circulation disorders and epiphyseal/apophyseal ossification disorders. Postural deformations.                      Clinical cases – juvenile osteochondrosis, aseptic femur head necrosis</p> <p>Short description: Clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>IV.</b>	<p>Title: Bones and joints of the lower limb – pelvis and hip.                      Degenerative joint diseases.                      Clinical cases – degenerative joint diseases, osteoarthritis, intervertebral disc prolapse.</p> <p>Short description: Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>V.</b>	<p>Title: Inflammatory diseases of the skeletal system – specific and non-specific osteomyelitis, infectious arthritis, rheumatoid arthritis.                      Arthropathies.                      Clinical cases – osteomyelitis, Bechterew disease, RA.</p> <p>Short description: Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>VI.</b>	<p>Title: Normal and disturbed bone healing (calyx, pseudoarthrosis, bone bank).                      Orthopedic supplies. Disability assessment.</p> <p>Short description: Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>VII.</b>	<p>Title: Scoliosis. Orthopedic technique. Congenital hip dislocation – diagnosis and management. Plaster – conservative treatment. Tumors of</p>

	<p>the musculoskeletal system. Palsies. Sympathetic reflex dystrophy – Sudeck disease.</p> <p>Short description: Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>VIII.</b>	<p>Title: Vertebral column – congenital and developmental disorders. Thorax.</p> <p>Short description: Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>IX.</b>	<p>Title: Shoulder girdle. Arm.</p> <p>Short description: Diseases and injuries.</p> <p>Literature: required and optional</p>
<b>X.</b>	<p>Title: Pelvic girdle. Hip and upper leg – allo-arthroplasty, epiphyseolysis capitis femoris, Legg-Calve-Perthes disease. Knee.</p> <p>Short description: Diseases and injuries. Definition, ethiology, clinical features, diagnostics and management.</p> <p>Literature: required and optional</p>
<b>XI.</b>	<p>Title: Lower leg, foot. Canalicular syndromes. Immobilization in bone fractures. Osteosynthetic materials. Fracture reduction. Monitoring of treatment of fractures and luxations.</p> <p>Short description: Diseases and injuries. Treatment methods.</p> <p>Literature: required and optional</p>
<b>XII.</b>	<p>Title: Introduction – approach to the injured person – LMS injuries in general. Basic principles and methods of treatment of bone fractures and joint luxations. Clinical cases – surgical and conservative management of bone fractures and joint luxations.</p> <p>Short description: Procedures in traumatology.</p> <p>Literature: required and optional</p>
<b>XIII.</b>	<p>Title: LMS injuries in children. Vertebral column, thorax and pelvis injuries. Clinical features of LMS injuries in children.</p> <p>Short description: Clinical features, diagnostics and treatments.</p> <p>Literature: required and optional</p>
<b>XIV.</b>	<p>Title: Upper limb fractures. Pseudoarthrosis.</p> <p>Short description: Definition, clinical features, diagnostics and treatment.</p> <p>Literature: required and optional</p>
<b>XV.</b>	<p>Title: Upper limb fractures.</p> <p>Short description: Procedures.</p> <p>Literature: required and optional</p>
<b>XVI.</b>	<p>Title: Basic principles of physical therapy and rehabilitation. Evaluation</p>

	of rehabilitation.
	Short description: Types of rehabilitation, disability, damage and functional limitations.
	Literature: required and optional
<b>XVII.</b>	Title: Thermotherapy, phototherapy, hydrotherapy.
	Short description: Types, mechanism of action, indications and contraindications.
	Literature: required and optional
<b>XVIII</b>	Title: Electrotherapy, sonotherapy.
	Short description: Classification and mechanism of action.
	Literature: required and optional
<b>XIX.</b>	Title: Degenerative and inflammatory rheumatic diseases.
	Short description: Classification, clinical features, treatment.
	Literature: required and optional
<b>XX.</b>	Title: Diseases of upper and lower motor neuron.
	Short description: Paraplegia, hemiplegia, MS, specific nerve and plexus palsies.
	Literature: required and optional
<b>XXI.</b>	Title: Deformities of vertebral column and joints.
	Short description: Scoliosis, kiyphosis, bad posture, hip luxations.
	Literature: required and optional