



## COURSE UNIT DESCRIPTION

Course unit title	Code
<b>Traumatology, Plastic and Reconstructive Surgery, Physical and Rehabilitation Medicine</b>	

Annotation
This course covers a wide variety of common topics in the field of Traumatology, Plastic and Reconstructive Surgery, Physical and Rehabilitation Medicine

Lecturer(s)	Department, Faculty
<b>Coordinating:</b> ass. prof. dr. Igoris Šatkauskas <b>Other:</b> ass. prof. dr. Giedrius Kvederas asist. dr. Nerijus Jakutis asist.dr. G. Stundžaitė-Baršauskienė lec. I. Sakalauskaitė lec. Jūratė Kesienė lec. dr. Svetlana Lenickienė ass. prof. dr. Aušra Adomavičienė, lec. Aušra Budėjienė, lec. Raimundas Venskaitis.	Clinic of Rheumatology, Orthopaedic and Traumatology and Reconstructive Surgery, Faculty of Medicine, Vilnius University, Santariškių 2, LT – 08661, Vilnius, Lithuania  Centre of Orthopaedic – Traumatology, RVUH, Šiltnamių 29, LT – 04130, Vilnius, Lithuania  The Department of Rehabilitation, Physical and Sports Medicine, Faculty of Medicine, Health Science Institute, Medical faculty, Vilnius University, Santariškių 2, LT – 08661, Vilnius, Lithuania

Study cycle	Level of the course unit	Type of the course unit
Integrated studies	-	Compulsatory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Lectures, seminars and practices in the operating room, emergency room, departments of Orthopedics, Traumatology, Plastic and reconstructive surgery, Rehabilitation, Physical and Sports Medicine Center	8	English

Requisites			
<b>Prerequisites:</b> Human anatomy, Human physiology, Psychology, Pharmacology, Propaedeutic of internal medicine, General surgery.		<b>Co-requisites (if relevant):</b> none	
Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	133	66	67

<b>Purpose of the course unit: programme competences to be developed</b>		
<p>The goal is to give knowledge for students about mechanism of musculoskeletal system injuries, wounds, dislocations, and fractures, about etiology, pathophysiology, clinical presentation, diagnosis and treatment principles of orthopaedic diseases; principles of Plastic and reconstructive surgery; principles of rehabilitation, impact of disability on persons biopsychosocial functions; structure of rehabilitation, main functions of all rehabilitation team members and their work measures, principles of the assessment in rehabilitation.</p> <p>After the course students will show abilities to provide first aid and professionally perform temporary immobilisation of fractures and dislocations, abilities of wound, dislocation, bone fracture diagnostics, symptoms, physiology of healing, the basic methods of treatment, the priorities of polytrauma patient evaluation and treatment steps. To know the evaluation, diagnostics and treatment methods of most common orthopaedic diseases, their possible complications and to evaluate orthopaedic trauma patient incapacity for work.</p> <p>After the course students will show abilities of problem based thinking, communication and work in group, while solving problems and bringing up decisions for persons with functional limitations of biopsychosocial functions.</p>		
<b>Learning outcomes of the course unit</b>	<b>Teaching and learning methods</b>	<b>Assessment methods</b>
<b>Generic competences</b>		
After successful completing the course students will be able to:		
Acting with integrity and ethical obligations to be empathetic, able to think critically and self-critically, be creative, proactive, to be able to communicate with others	Practical classes in departments of orthopaedic, traumatology, rehabilitation, plastic and reconstructive surgery, human mannequins – simulators classes.	Continuous assessment of knowledge and situation analysis in departments of orthopaedic, traumatology, plastic and reconstructive surgery and rehabilitation, human mannequins – simulators classes.
To analyze and synthesize knowledge acquired during studies, self-study, be able to apply knowledge acquired during practice, to know competencies and seek for advice, if necessary, to solve problems and make common decisions.	Practical classes in departments of orthopaedic, traumatology, rehabilitation, plastic and reconstructive surgery, human mannequins – simulators classes.	Continuous assessment of knowledge and situation analysis in departments of orthopaedic, traumatology and rehabilitation, plastic and reconstructive surgery, human mannequins – simulators classes.
Be able to communicate and collaborate in group with other specialists and experts; to organise and plan work activities.	Practical classes in departments of orthopaedic, traumatology, rehabilitation, plastic and reconstructive surgery ,human mannequins – simulators classes.	Continuous assessment of knowledge and situation analysis in departments of orthopaedic, traumatology and rehabilitation, plastic and reconstructive surgery, human mannequins – simulators classes.
<b>Subject-specific competences</b>		
After successful completing the course students will be able to:		
Be able to evaluate trauma patient status, clinical examination, to recognize life threatening cardiac, breathing and circulation conditions. To perform examination of orthopaedic patient, limb length evaluation and range of joint movement evaluation according to Neutral 0 methodology.	Problem based teaching, lectures. Model situation, case analysis during seminars.	Assessment of activities during practise; assessment of assignments.
To provide emergency aid in case of soft tissue injury, bruising, ligament sprain, rupture, and wound. To perform diagnostical examination and	Group work, discussions. Demonstration of assessment	All practise tasks and assignments should be done to be permitted to take a written exam at the end of the course.

<p>know treatment. To know principles of how to stop the bleeding, primary surgical wound closure.</p> <p>Bone dislocation. Diagnostics, first aid and treatment. Reposition techniques. Management after reposition. Regular dislocation.</p>	<p>skills (hands-on).</p> <p>Assessment conclusion and argumentation.</p> <p>Role games.</p> <p>Individual work.</p>	
<p>To evaluate clinical presentation of bone fracture, their diagnostics using clinical and radiological examination, possible complications, to establish preliminary indications for conservative or surgical treatment, to create an examination and observation plan for a patient with a bone fracture, to perform rehabilitation treatment expertise and healing prognosis.</p>		
<p>To create treatment plan for patients after acute severe pulmonary failure, shock, severe impaired consciousness, resuscitation.</p>		
<p>To be able to diagnose and differentiate orthopaedic bone and connective tissue diseases. To understand their treatment. To be able to suspect oncological skeletal disease and to create diagnostic plan.</p>		
<p>To apply principles of evidence-based medicine, justifying tactics of trauma patient diagnostics and treatment, during discussion of clinical cases.</p>		
<p>To understand principles of effective communication in medicine: communicate with patients, patient relatives.</p>		
<p>To properly and fully store and protect medical documentation, know how to use computer and perform search of literature; to protect and update information.</p>		
<p>Be able to evaluate effect of illness or injury on biopsychosocial functions of a person, to explain principles and possibilities of rehabilitation measures application.</p>		
<p>Be able to evaluate psychological, social and environmental factors impact on patients' wellbeing</p>		
<p>To know rehabilitation system, to understand and be able to explain role and functions of each rehabilitation team member</p>		

Course content: breakdown of the topics	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship/work placement	Contact hours, total	Individual work	Assignments
Biology of bone tissue. Bone fractures, their morphology and classification. Treatment of bone fractures. Methods, indications and contraindications, potential complications.	1		1				2	2	Prepare for the practice and know about biology of bone tissue. Know bone fracture classification and morphology. Work with artificial bone models and discussion of different fracture morphologies in roentgenograms during seminars. Know the methods, indications, and contraindications of bone fracture treatment. Visitation of patients with bone fractures, discussion of clinical cases, roentgenological and treatment plan evaluation during seminars.
Traumatic dislocations of bones and their treatment. Injuries of the shoulder. Bone fractures of the upper extremity and their treatment.	1		1	1			3	2	Prepare for the practice and know about conservative and surgical treatment of upper extremity. Simulation of immobilization and conservative treatment methods of arm fracture during seminar. Visitation of patients with upper extremity bone fractures, discussion of clinical cases, roentgenological and treatment plan evaluation.
Bone fractures of the lower extremity and their treatment.	1		1	1			3	2	Prepare for the practice and know about conservative and surgical treatment of lower extremity. Simulation of immobilization and conservative treatment methods of leg fracture during seminar. Visitation of patients with femur and tibia fractures, discussion of clinical cases, roentgenological and treatment plan evaluation.

Orthopaedic diseases of the shoulder joint, diagnostics and treatment.			1				<b>1</b>	<b>1</b>	Prepare for the practice and know about degenerative diseases of shoulder, rotator cuff degenerative tears, frozen shoulder clinical symptoms. Visitation of patients with shoulder pathology, discussion of roentgenological and MRI imaging of affected shoulder, differential diagnosis. Clinical evaluation of shoulder joint range of motion using Neutral 0 methodic.
Orthopaedic diseases of the hip joint, diagnostics and treatment.			1	1			<b>3</b>	<b>3</b>	Prepare for the practice and know about most common diseases of hip joint. Hip arthrosis epidemiology, etiology and treatment. Perform coxa valga and coxa vara simulation corrections during seminars. Visitation of patients with orthopaedic diseases of hip joint, discussion of radiological imaging of affected hip joint, differential diagnosis. Clinical evaluation of hip joint range of motion using Neutral 0 methodic.
Fractures of the spine and degenerative diseases.			1	1			<b>2</b>	<b>2</b>	Prepare for the practice and know about the symptoms, possible complications of vertebra fracture. Know most common diseases of the spine. Practical clinical examination, radiological imaging evaluation of the spine during seminar. Visitation and discussion of patients with specific diseases.
Injuries and orthopaedic diseases of the knee joint.			1	1			<b>2</b>	<b>1</b>	Prepare for the practice and know about knee joint injuries, their clinical presentation and possible diagnostics. Discussion about knee joint aspiration. Clinical evaluation of knee joint range of motion using Neutral 0 methodic. Simulation of knee joint injury immobilization. Visitation of patients with knee arthrosis, discussion of clinical cases, radiological imaging of affected knee joint.

Injuries of the pelvic ring.	1		1				2	2	Prepare for the practice and know about fractures of pelvic ring and femur, their clinical presentation and diagnostical examination. Epidemiology of proximal part of femur. Discussion of clinical cases, radiological imaging, treatment priorities, and importance of adequate anesthesia.
Fractures of the proximal part of femur	1		1	1			3	2	Visitation of geriatric patients with hip fractures. Discussion of clinical cases, treatment priorities, importance of adequate anesthesia. Consideration of nursing and preoperative management of geriatric patients with hip fracture, modeling of various clinical cases according to comorbidities and coagulation abnormalities. Discussion of performed and planned treatment.
Polytrauma			1	1			2	2	Discussion about strategies and principles of polytrauma patient management. Visitation of emergency room intensive care unit and discussion of polytrauma patient treatment sequence while simulating a case of polytrauma.
Endoprosthesis replacement of the joints. Indications, contraindications, and potential complications.	1			1			2	2	Prepare for the practice and know about conservative and surgical treatment of joint degenerative diseases. Clinical evaluation of joint range of motion using Neutral 0 methodic. Discussion of clinical cases, radiological imaging.

Fractures of the foot and ankle joint. Subluxation and dislocation of foot. Orthopaedic diseases of the foot.			1			<b>1</b>	<b>1</b>	Prepare for the practice and know about clinical presentation, examination, conservative and surgical treatment of foot fractures. Know how to and perform immobilization of injured foot or ankle during seminar. Discussion of specific foot fracture radiological imaging. Discussion of clinical cases of Hallux valgus, pes planum, digitus malleus and pes equino-varus. Discussion of etiopathogenetic factors of these pathologies, prophylactical management. Discussion of clinical cases, radiological images.
Burns and thermal trauma. The features of burns, diagnostics, and treatment. Frostbites, their diagnostics and treatment.			1			<b>1</b>	<b>1</b>	Methodic of burn area evaluation. Degree of burn. Discussion of clinical cases of patients with burns, attendance of their dressing replacement. Discussion of treatment management after burn. Clinical evaluation of frostbites and demarcation lines. Degrees of frostbites, clinical evaluation during seminar. Attendance of their dressing replacement.
Oncology of bone, cartilage, and connective tissue.			1			<b>1</b>	<b>1</b>	Discussion of clinical cases with benign and malignant skeletal tumors. Tumor radiological differential diagnostics. Discussion about different radiological signs of different tumors. Discussion about tumor diagnostics and treatment management.
Peripheral nerve injuries: nerve structure, pathology, clinical features and principles of treatment. Nerve injuries and compressive neuropathies of the upper and lower limbs.			1			<b>1</b>	<b>2</b>	Prepare for the practice and know about nerve structure, injuries, compressive neuropathies, clinical features, diagnostics and principles of treatment, nerve repair techniques.
Hand surgery: basics, microsurgery, tendon injuries, diseases, treatment: conservative and surgery. Dupuytren contracture. Replantations.			1			<b>1</b>	<b>2</b>	Prepare for the practice and know about common hand injuries and diseases, principals of treatment, microsurgery technique. Know the indications for replantation and how to provide the first aid for amputations.

Reconstructive surgery: basics, grafts, flaps, pedicled and free flaps. Breast reconstruction.			2	8			<b>10</b>	<b>10</b>	Prepare for the practice and know the principles of reconstructive surgery, indications, types and surgical techniques of grafts and flaps. Principles of breast reconstruction
Tendencies of rehabilitation development. Philosophy and principles of the rehabilitation, structure of rehabilitation. Biopsychosocial functions of a person. International Classification of Functioning, Disability and Health. Disability and working ability/capacity assessment. Social rehabilitation and integration of disabled.	3		2	2			<b>7</b>	<b>7</b>	Read literature on PRM field and specialty development, WHO documents about disability, rehabilitation, social integration. Prepare presentation of medical and social rehabilitation in different countries. To prepare case for topic "ICF".
Assessment in rehabilitation process, the principles of rehabilitation plan and goal setting.			1	5			<b>6</b>	<b>6</b>	To prepare for practice about assessment measures in rehabilitation (goniometry, MMT, MMSE, muscle tone, pain). Read scientific article and prepare presentation about assessment tool in rehabilitation (adult or children).
Teamwork in rehabilitation. Rehabilitation measures: physical modalities, physiotherapy, occupational therapy, speech therapy, role of social worker and psychologist in rehabilitation.	3		2	2			<b>7</b>	<b>7</b>	To prepare for role game about interaction in rehabilitation team.
Physical agents for treatment and rehabilitation. Assistive devices and orthotics. Adaptation of the environment for different needs. Physical activity for health.	2		3	1			<b>6</b>	<b>7</b>	Search information about adaptation of environment and assistive devices. To prepare short introduction. Analysis of the article about different physical agents, with emphasis on action, indications and contraindications for their use. Prepare for discussion and reasoning on WHO Physical activity recommendations for children and adults.
<b>Total</b>	<b>14</b>		<b>22</b>	<b>30</b>			<b>66</b>	<b>67</b>	



Assessment strategy	Weight %	Deadline	Assessment criteria
Written exam:	100 %	session	<p>Student is allowed to have an exam if he/she did all practice tasks and assignments. Evaluation of the knowledge of subject matter through test. The test consists of 100 single select multiple choice questions. Traumatology – 45, Plastic and reconstructive surgery – 15, Rehabilitation and Physical Medicine – 40 questions.</p> <p>The 10 point scale is used for evaluation:</p> <p>10 points – excellent knowledge and abilities (95-100 percent of questions are answered correctly);</p> <p>9 points – very good knowledge and abilities (85-94 percent of questions are answered correctly);</p> <p>8 points – good knowledge and abilities (75-84 percent of questions are answered correctly);</p> <p>7 points – average knowledge and abilities (65-74 percent of questions are answered correctly);</p> <p>6 points – satisfactory knowledge and abilities (55-64 percent of questions are answered correctly);</p> <p>5 points – poor knowledge and abilities (45-54 percent of questions are answered correctly);</p> <p>4 points – very poor (unsatisfactory) knowledge and abilities (35-44 percent of questions are answered correctly);</p> <p>3 points – unsatisfactory knowledge and abilities (25-34 percent of questions are answered correctly);</p> <p>2 points – unsatisfactory knowledge and abilities (15-24 percent of questions are answered correctly);</p> <p>1 point – unsatisfactory knowledge and abilities (5-14 percent of questions are answered correctly).</p> <p>0 points – less than 5 or no correct answers or the testing was discontinued due to unacademic behaviour during assessment.</p>

Author	Publishing year	Title	Issue of a periodical or volume of a publication; pages	Publishing house or internet site
<b>Required reading</b>				
Solomon L, Warwick DJ, Nayagam S.	2014	Apley and solomon's concise system of orthopaedics and trauma.		<a href="https://www.taylorfrancis.com">https://www.taylorfrancis.com</a>
Thomas P. Rüedi, Richard E. Buckley, Christopher G. Moran	2017	AO principles of fracture management. Third edition		<a href="https://www.thieme.com/">https://www.thieme.com/</a>
White Book on Physical and Rehabilitation Medicine in Europe	2018	White Book on Physical and Rehabilitation Medicine in Europe		<a href="http://www.whitebookprm.eu">www.whitebookprm.eu</a>
United Nations	2006	Convention on the Rights of		<a href="https://www.un.org/disabilitie">https://www.un.org/disabilitie</a>

		Persons with Disabilities		<a href="https://documents.convention/conv-optprot-e.pdf">s/documents/convention/conv-optprot-e.pdf</a>
Gerold Stucki, Mauro Zampolini, Juocevicius, Stefano Negrini, Nicolas Christodoulou	2017	Practice, science and governance in interaction: European effort for the system-wide implementation of the International Classification of Functioning, Disability and Health (ICF) in Physical and Rehabilitation Medicine	Vol. 53 - No. 2© 2017 Edizioni Minerva Medica	<a href="https://www.minervamedica.it/en/getfreepdf/nImNEcx4cIIWks%252FHTp5YF2D9qRtA%252BXDI5san6u87roE4Zlksn4fMLMb%252BqA7do0sdzkt p3WOz%252BfvoErobcc%252Bwkg%253D%253D/R33Y2017N02A0299.pdf">https://www.minervamedica.it/en/getfreepdf/nImNEcx4cIIWks%252FHTp5YF2D9qRtA%252BXDI5san6u87roE4Zlksn4fMLMb%252BqA7do0sdzkt p3WOz%252BfvoErobcc%252Bwkg%253D%253D/R33Y2017N02A0299.pdf</a>
Lietuvos respublikos sveikatos apsaugos ministro įsakymas	2008-01-17	„Dėl medicininės reabilitacijos ir sanatorinio (antirecidyvino) gydymo organizavimo“	Nr. V-50	<a href="https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.313664/asr">https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.313664/asr</a>
WHO	2020	WHO Guidelines on physical activity and sedentary behaviour		<a href="https://www.who.int/publications/i/item/9789240015128">https://www.who.int/publications/i/item/9789240015128</a>
<b>Recommended reading</b>				
AO		Adult trauma		<a href="https://surgeryreference.aofoundation.org/orthopedic-trauma/adult-trauma">https://surgeryreference.aofoundation.org/orthopedic-trauma/adult-trauma</a>
American College of Surgeons. Committee on Trauma	2018	Advanced Trauma Life Support. Student Course Manual. Tenth edition		<a href="https://web4.facs.org/ebusiness/ProductCatalog/product.aspx?ID=863">https://web4.facs.org/ebusiness/ProductCatalog/product.aspx?ID=863</a>
WHO		Rehabilitation in health systems	2019	<a href="https://www.who.int/publications/i/item/9789241515986">https://www.who.int/publications/i/item/9789241515986</a>
WHO		International Classification of Functioning, Disability and Health		<a href="https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health">https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health</a>
Professional associations for physical activity, Sweden	2010	"Physical Activity in the Prevention and Treatment of Disease"		<a href="http://www.fyss.se/wp-content/uploads/2011/02/fyss_2010_english.pdf">http://www.fyss.se/wp-content/uploads/2011/02/fyss_2010_english.pdf</a>
B. Young, M. A. Young, S. A. Spiens	1997	PM and R secrets		Philadelphia
A. Kriščiūnas	2008/2014	Reabilitacijos pagrindai		Kaunas, Vitae Litera
Mc Carty JG eds.	1990	Plastic Surgery		Philadelphia. W.B. Saunders Co.
Buncke HJ	1991	Microsurgery: Transplantation - replantation		Philadelphia. Lea & Febiger