COURSE UNIT (MODULE) DESCRIPTION

Course unit title	Code
Children's diseases and Pediatric surgery – part II	

Lecturer(s)	Department(s)
Coordinating: Assoc. prof. Sonata Šaulytė Trakymienė **Others:** Lecturers of Clinic of Children Diseases, Institute of Clinical Medicine	Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Children's Diseases, Santariškių st. 4, Vilnius Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Children's Diseases, Santariškių st. 7, Vilnius

Cycle	Level of the course unit	Type of the course unit
cycle (integrated studies)	-	Compulsory

Mode of delivery	Period of delivery	Language of instruction
Combined learning. E-learning (distance learning) lectures; workshops and seminars in Pediatric Units, Pediatric Intensive Care Unit and simulator classroom	Year V, semester X;	English

Prerequisites and corequisites	
Prerequisites: A student must have completed the following courses: Human anatomy, Human histology, Human physiology and Genetics, Biochemistry, Microbiology, General medicine propaedeutics and Basics of clinical oncology, Radiology, Pathology, Anaesthesiology and Intensive care, General Surgery, Infectious diseases and Dermatology, General Pediatrics and Neonatology, Pulmonology, Allergology and Clinical Immunology, Thoracic Surgery, Gastroenterology and Abdominal Surgery, Neurology and Neurosurgery, Clinical Laboratory Diagnostics, Traumatology and Rehabilitation, Cardiology.	**Corequisites (if any):** none.

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5	135	66	69

Purpose of the course unit: Programme competences to be developed
Aims:

Children's diseases: to learn and be familiar with the peculiarities of pediatric cardiology, rheumatology, hematology and oncology, neurology, intensive care and resuscitation, diagnosis, course and treatment of life-threatening pathological syndromes and critical health conditions. Upon graduation of the course, the student must be able to recognize and diagnose childhood life-threatening pathological syndromes and the most common pediatric cardiologic, rheumatic, hematologic, oncologic and neurological diseases, independently conduct a clinical examination of the child, prescribe and interpret diagnostic techniques, provide emergency care and treatment.		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
Generic competences **At the end of the study programme graduate will be able:**		
To act fairly and comply with ethical obligations; ability to think critically and self-critically; be creative, initiative, able to achieve the goal; be able to communicate with others. Independently solve problems and make decisions; to communicate and work in a team, assess the boundaries of own competencies, seek help if needed. To collect, understand and apply theoretical knowledge, analyze and synthesize; to think critically and evaluate.	Lectures in e-learning (distance learning), independent information retrieval, seminars and workshops in Pediatric Units and Pediatric Intensive Care Unit, simulator classroom, theoretical and clinical case studies, discussion within a group and decision making. .	Continuous assessment of theoretical knowledge and practical skills in presenting, analysing theoretical material, clinical cases, and decision making. Evaluation of preparation and control tests.
Subject-specific competences **At the end of the study programme graduate will be able:**		
To obtain medical history children of various age and their relatives. To carry out physical examination of children of various age. Plan and evaluate the tests needed for a particular case. To recognize, assess and describe the manifestation, course and severity of clinical signs of children's cardiological, rheumatic, oncohaematological, neurological and acute life-threatening conditions, the severity of clinical signs; to order required tests and interpret their results; to carry out differential diagnostics and to prepare the relevant patient monitoring plan; to discuss the child's disease and condition with his parents or guardians.	Lectures (e-learning), individual search for information, seminars in classrooms, and practical tasks at the Center of Pediatrics, Pediatric Surgery Unit, examining and discussing the patients. Solving real and simulated clinical situations, working with mannequins and patient simulators. Preparing, solving and discussing tests. Taking part in ward rounds and patient discussions	Continuous assessment of practical tasks presenting, analyzing, discussing clinical cases and making decisions in Pediatric Units and Pediatric Intensive Care Unit as well as simulator classroom. Assessment of preparation and tests. The cumulative exam score at the end of the course and computerized written exam.
To administer adequate and appropriate treatment according to child's age and weight; to assess the appropriateness, potential benefit and harm of medicines and other treatment methods to children of all age groups; to assess the effectiveness of the treatment.	Lectures (e-learning), individual search for information, seminars in classrooms, practical tasks at the Center of Pediatrics, Pediatric Surgery Unit and in the Operating theatre. Examining and discussing the patients. Solving real and simulated clinical situations.	Continuous assessment of practical tasks administering treatment, motivating decision and assessing the effectiveness of treatment in Pediatric Units and Pediatric Intensive Care Unit as well as simulator classroom. Assessment of preparation and tests.

		The cumulative exam score at the end of the course and computerized written exam.
To recognize and assess children's critical health conditions, administer emergency care and differentiate the underlying causes; to apply resuscitation according to current European and Lithuanian standards.	Working in Pediatric emergency and Intensive care units, assessing the condition of presenting severe patients and providing emergency care. Dealing with real and simulated clinical situations, working with mannequins s and simulators in the simulation classroom.	Continuous assessment of practical tasks in Pediatric emergency and Intensive care units units. Assessment of real and simulated clinical situations. The cumulative exam score at the end of the course and computerized written exam.
To apply principles, methods and knowledge of biomedical sciences in medical practice. To use computers and search for sources of information	Lectures and seminars in classrooms. Taking part in ward rounds and patient discussions. Solving real and simulated clinical situations.	Continuous assessment of practical tasks in Pediatric Units and Pediatric Intensive Care Unit. Assessment of real and simulated clinical situations.
To understand the principles of efficient communication in medical practice: to communicate with patients, their relatives and specialists from children's educational institutions. To maintain confidentiality, apply ethical principles in clinical practice.	Practical training in in Pediatric Emergency and Pediatric Intensive Care Units, assessing condition of severe patients and providing eemergency care.	Continuous assessment of practical tasks in Pediatric Units and Pediatric Intensive Care Unit.

Topics	**Contact work hours**							**Time and tasks of self-study**	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	**Total contact hours**	**Self-study**	**Tasks**
Children's diseases									
1. Congenital and acquired heart diseases: defects, arrhythmias, cardiomyopathies: etiology, classification, diagnostics and treatment. Visual and instrumental differential diagnostics of children's heart diseases.	1,6		2,6	2,4			6,6	6,9	To repeat fetal circulation and peculiarities of hemodynamics in heart defects, healthy heart's electrophysiology. To prepare for the diagnostics and treatment peculiarities of congenital arrhythmias and cardiomyopathies, and instrumental diagnostics of children's heart disease also.
2. Inflammatory heart diseases in children: myocarditis, infectious endocarditis, pericarditis. Heart failure in children: etiology, classification due to patient's age, diagnostics and treatment.	1,6		2,6	2,4			6,6	6,9	To prepare about the peculiarities of inflammatory heart diseases in children: etiology, risk factors, clinical, laboratory, and instrumental diagnostic, treatment peculiarities also.

3. Systemic connective tissue disorders in children. Vasculitis in children.	1,6		2,6	2,4			6,6	6,9	To learn children's age peculiarities, diagnostic criteria's and treatment principles of systemic connective tissue disorders (systemic lupus erythematosus, juvenile dermatomyositis and scleroderma). To prepare about age peculiarities of Henoch–Schönlein purpura, juvenile polyarthritis nodosa and other vasculites in children, to know their differential diagnosis and principles of treatment.
4. Children with juvenile idiopathic arthritis. Differential diagnostics and treatment of children's rheumatic diseases.	1,6		2,6	2,4			6,6	6,9	To get acquainted with non-inflammatory articular disorders simulating arthritis, their diagnosis, treatment and rehabilitation principles, peculiarities of biological therapy.
5. Diagnosis, treatment and follow-up of hemoblastoses and solid tumors	1,6		2,6	2,4			6,6	6,9	To get acquainted with peculiarities of leukemias, lymphomas and solid tumors in children, their standard treatment and chemotherapy principles.
6. Diagnosis, differential diagnosis and treatment of anemias, trombocytopenies, disorders of hemostasis, histiocytes and macrophages.	1,6		2,6	2,4			6,6	6,9	To prepare about diagnosis, differential diagnosis and treatment of anemias, trombocytopenies, disorders of hemostasis, histiocytosis, histiocytosis syndromes in children, principles of chemotherapy in children.
7. Differential diagnosis of seizures in childhood. Epilepsy. Acute symptomatic seizures. Febrile seizures. Non-epileptic seizures. First aid for seizures.	1,6		2,6	2,4			6,6	6,9	To prepare about the peculiarities of epilepsy and treatment principles in children; to prepare about etiology, pathogenesis, diagnosis, treatment and first aid for acute provoked seizures, especially febrile seizures, also the criteria and treatment principles of status epilepticus, non-epileptic paroxysmal disorders in children.
8. Children developmental disorders, cerebral palsy, congenital neuromuscular diseases	1,6		2,6	2,4			6,6	6,9	To get acquainted with main terms of acquisition of children skills, classification and diagnosis of children developmental disorders, diagnosis, treatment and rehabilitation principles of cerebral palsy, manifestations of congenital neuromuscular diseases in children.
9. Peculiarities of children's emergency conditions. Differential diagnosis and evaluation of status of acute respiratory failure, cardiovascular disorders, critical conditions.	1		2,6	2,4			6	4,6	To acquire knowledge about assessment of difficulty and instability of child's current status, recognition of current status, resuscitation of children of various ages, application of typical protocols; to know acute

Resuscitation of children. Differential diagnosis, treatment principles and emergency care of acute respiratory failure and different shocks									consciousness disorders. Sepsis, septic shock and multiple organ dysfunctions.
10. Peculiarities of children's homeostasis: body fluids compartments, electrolytes and fluid balance, interpretation of acid-base disturbances. Intravenous fluid therapy in children, common intravenous solutions. Care of a child with fever.	1		2,6	2,4			6	4,6	To get acquainted with peculiarities of homeostasis regarding children's various age, changes in hydration and osmosis, acid-base imbalance and its causes; to learn how to assess the abnormalities of water, electrolytes and acid-base and correct them. Know the basic principles of pediatric infusion therapy, to be able to apply infusion therapy to a seriously ill child. Care of a child with fever.
11. Pediatric accident and emergency conditions: poisonings, choke, shocked infant's syndrome, drowning, heat injury, severe trauma.	1,2						1,2	4,6	To get acquainted with the most common childhood accidents poisonings, choke, shocked infant's syndrome, drowning, and severe trauma. Learn how to provide emergency assistance, know the principles of prevention
Total	**16**		**26**	**24**			**66**	**69**	

Assessment strategy	**Weight (points)**	**Assessment period**	**Assessment criteria**
Assessment of work at the Centre of Pediatrics, Pediatric Surgery Unit. Assessment of judgments taken in real and simulated clinical situations. Methods of evaluation: Written tests. Open-ended questions. Analysis and presentation of theoretical material. Presentation of clinical situations and analysis of theoretical material. Presentation and analysis of patients.	20	During the course	5 topicss will be assessed: padiatric cardiology, pediatric rheumatology, pediatric hematology/oncology, pediatric neurology and pediatric intensive care. The maximum score for each topic is 4 points. At the end of the cycle, the points are added up to a maximum of 20 points. This assessment is part of the cumulative final assessment
Computerized written exam	60	At the end of the course	Theoretical and clinical tests, with a maximum possible score of 60 points. The programmed exam may only be taken after all seminars and workshops have been passed and evaluated.
Final score	100	After the exam	The final score is the sum of the cumulative scores for pediatric infectious diseases, pediatric surgery, children's diseases and computerized written exam.

Author	**Year of publication**	**Title**	**No of periodical or vol. of publication**	**Publication place and publisher or Internet link**
Required reading				

Karen J. Marcdante MD, Robert M. Kliegman MD and Abigail M. Schuh MD	2023	Nelson Essentials of Pediatrics	Ninth Edition	Elsevier https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20190012800
Lissauer T., Carroll W.	2022	Illustrated Textbook of Paediatrics'	6th edition	https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20190011636
Lectures and material provided in VMA Moodle				
Recommended reading				
Robert Kliegman, Joseph St. Geme	2020	Nelson Textbook of Pediatrics	21st Edition	Elsevier https://www.clinicalkey.com/#!/browse/book/3-s2.0-C20161017121
		American Academy of Pediatrics		www.aap.org
European Resuscitation Council	2021	P. Van de Voorde, et al., European Resuscitation Council Guidelines 2021: Paediatric Life Support, Resuscitation 161 (2021); 327-387.		https://cprguidelines.eu/
Marc Auerbach, Chief Editor: Dharmendra J Nimavat	2021	Pediatric Resuscitation Technique Updated: Jun 14, 2021		http://emedicine.medscape.com/article/1948389-technique
Shelley C Springer, Chief Editor: Dale W Steele	2022	Pediatric Respiratory Failure Updated: Dec 05, 2022		http://emedicine.medscape.com/article/908172-overview
Eric A Pasman, Chief Editor: Dale W Steele	2019	Shock in Pediatrics Updated: Jul 12, 2019		http://emedicine.medscape.com/article/1833578-overview#a5
Alex Koyfman, Chief Editor: Muhammad Waseem	2018	Pediatric Dehydration Updated: Nov 12, 2018		http://emedicine.medscape.com/article/801012-overview#showall
Michael J Verive, Chief Editor: Timothy E Corden	2022	Pediatric Single-Dose Fatal Ingestions Updated: Apr 21, 2022		https://emedicine.medscape.com/article/1011108-overview
		Pediatric Cardiology		https://pediatriccardiology.wordpress.com/category/13-freedownload/
Cassidy J.	2011	Textbook of Pediatric Rheumatology	6th ed.	http://www.sciencedirect.com/science/book/9781416065814
		Epilepsies: diagnosis and management (NICE guideline)		https://www.nice.org.uk/guidance/cg137
		Epilepsy (International League Against Epilepsy (ILAE) guidelines)		https://www.ilae.org/guidelines
		Cerebral palsy in under 25s: assessment and management (NICE guideline)		https://www.nice.org.uk/guidance/ng62
		American academy of Neurology Summary for clinicians. Practice parameter: diagnostic assessment of the child with cerebral palsy.		http://www.neurology.org/content/62/6/851.full https://www.aan.com/Guidelines/Home/Search
Word Federation of Hemophilia,	2023	eLearning		https://elearning.wfh.org/
	2023	Epilepsy Foundation		https://www.epilepsy.com/

	2022	Epilepsies in children, young people and adults (NICE guideline)		https://www.nice.org.uk/guidance/ng217
	2022	Epilepsy (International League Against Epilepsy (ILAE) guidelines)		https://www.ilae.org/guidelines
	2017	Cerebral palsy in children and young people (NICE guideline)		https://www.nice.org.uk/guidance/qs162
	2019	In Sook Park Editor An Illustrated Guide to Congenital Heart DiseaseFrom Diagnosis to Treatment From Fetus to Adult. Springer Nature Singapore.		https://doi.org/10.1007/978-981-13-6978-0
	2014	Pediatric cardiology: the essential pocket guide / Walter H. Johnson Jr., James H. Moller. 2014 Wiley. ISBN 978-1-118-50340-9		
Elena Arbelo, (Chairperson) (Spain), Alexandros Protonotarios, (Task Force Co-ordinator) (United Kingdom), Juan R. Gimeno, (Task Force Co-ordinator) (Spain), Eloisa Arbustini (Italy), Roberto Barriales-Villa (Spain), Cristina Basso (Italy), Connie R. Bezzina (Netherlands), Elena Biagini (Italy), Nico A. Blom1 (Netherlands), Rudolf A. de Boer (Netherlands), Tim De Winter (Belgium), Perry M. Elliott (United Kingdom), Marcus Flather (United Kingdom), Pablo Garcia-Pavia (Spain), Kristina H. Haugaa (Sweden), Jodie Ingles (Australia), Ruxandra Oana Jurcut (Romania), Sabine Klaassen (Germany), Giuseppe Limongelli (Italy), Bart Loeys 2 (Belgium), Jens Mogensen (Denmark), Iacopo Olivotto (Italy), Antonis Pantazis (United Kingdom), Sanjay Sharma (United Kingdom), J. Peter Van Tintelen (Netherlands), James S. Ware (United Kingdom), Juan Pablo	2023	2023 ESC Guidelines for the management of cardiomyopathies. European Heart Journal (2023) 44, 3503–3626.		https://doi.org/10.1093/eurheartj/ehv194

Kaski, (Chairperson) (United Kingdom), and ESC Scientific Document Group				
Theresa A. McDonagh , (Chairperson) (United Kingdom), Marco Metra, (Chairperson) (Italy), Marianna Adamo, (Task Force Co-ordinator) (Italy), Roy S. Gardner, (Task Force Co-ordinator) (United Kingdom), Andreas Baumbach (United Kingdom), Michael Böhm (Germany), Haran Burri (Switzerland), Javed Butler (United States of America), Jelena Čelutkienė (Lithuania), Ovidiu Chioncel (Romania), John G.F. Cleland (United Kingdom), Maria Generosa Crespo-Leiro (Spain), Dimitrios Farmakis (Greece), Martine Gilard (France), Stephane Heymans (Netherlands), Arno W. Hoes (Netherlands), Tiny Jaarsma (Sweden), Ewa A. Jankowska (Poland), Mitja Lainscak (Slovenia), Carolyn S.P. Lam (Singapore), Alexander R. Lyon (United Kingdom), John J.V. McMurray (United Kingdom), Alexandre Mebazaa (France), Richard Mindham (United Kingdom), Claudio Muneretto (Italy), Massimo Francesco Piepoli (Italy), Susanna Price (United Kingdom), Giuseppe M.C. Rosano (United Kingdom), Frank Ruschitzka (Switzerland), Anne Kathrine Skibelund (Denmark), and ESC Scientific Document Group	2023	2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart. European Heart Journal (2023) 44, 3627–3639		https://doi.org/10.1093/eurheartj/ehv195
Victoria Delgado, (Chairperson) (Spain), Nina Ajmone Marsan, (Task Force Co-ordinator) (Netherlands), Suzanne de Wahat, (Task	2023	2023 ESC Guidelines for the management of endocarditis Developed by the task force on the management of endocarditis of the		https://doi.org/10.1093/eurheartj/ehead193

Force Co-ordinator) (Germany), Nikolaos Bonaros (Austria), Margarita Brida (Croatia), Haran Burri (Switzerland), Stefano Caselli (Switzerland), Torsten Doenst (Germany), Stephane Ederhy (France), Paola Anna Erba 1 (Italy), Dan Foldager (Denmark), Emil L. Fosbøl (Denmark), Jan Kovac (United Kingdom), Carlos A. Mestres (South Africa), Owen I. Miller (United Kingdom), Jose M. Miro 2 (Spain), Michal Pazdernik (Czech Republic), Maria Nazarena Pizzi (Spain), Eduard Quintana 3 (Spain), Trine Bernholdt Rasmussen (Denmark), Arsen D. Ristić (Serbia), Josep Rodés-Cabau (Canada), Alessandro Sionis (Spain), Liesl Joanna Zühlke (South Africa), Michael A. Borger, (Chairperson) (Germany), and ESC Scientific Document Group		European Society of Cardiology (ESC) Endorsed by the European Association for Cardio-Thoracic Surgery (EACTS) and the European Association of Nuclear Medicine (EANM). European Heart Journal (2023) 44, 3948–4042		
	2019	In Sook Park Editor An Illustrated Guide to Congenital Heart DiseaseFrom Diagnosis to Treatment From Fetus to Adult. Springer Nature Singapore.		https://doi.org/10.1007/978-981-13-6978-0
	2023	Medscape		Access via the VU Library
	2023	ClinicalKey		Access via the VU Library
	2023	UpToDate		Access via the VU Library

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