

<b>Course Title</b>	<b>Physiotherapy of Pediatric Disorders</b>				
<b>Course Code</b>	PHYS303				
<b>Course Type</b>	Compulsory				
<b>Level</b>	Bachelor (Level 1)				
<b>Year / Semester</b>	3 <sup>d</sup> / Fall				
<b>Instructor's Name</b>	Dr Nikolaos Chrysagis				
<b>ECTS</b>	6	<b>Lectures / week</b>	2	<b>Laboratories/week</b>	2
<b>Course Purpose</b>	<p>The purpose of the course is to introduce students to the basic principles of Pediatric Physiotherapy, through typical development, its frequent deviations as well as the knowledge and use of valid assessment tools and therapeutic approach. The course covers a wide range of pediatric topics that arise within physical therapy practice and consists of neurological/developmental, musculoskeletal, respiratory disorders and congenital heart disease occurring in infancy and/or childhood. Upon completion of the course, students will build the essential background knowledge of the different disorders that require Physiotherapy rehabilitation in infancy/childhood and will develop critical skill in selecting and using appropriate assessment tools and therapeutic approaches.</p>				
<b>Learning Outcomes</b>	<p>By the end of the course the student will be able to:</p> <ul style="list-style-type: none"> <li>• recognize typical development during infancy/childhood</li> <li>• <b>Assess patients using the ICF approach in organising the information gained from both subjective and objective assessments,</b></li> <li>• recognize the common deviations of typical development and the related background of sensorimotor pediatric disorders</li> <li>• select and use appropriate outcome measures for the assessment of each disorder</li> <li>• organize and sets goals appropriate and individualized for each clinical pediatric disorder</li> <li>• <b>Collaborate and interact with members of the mulrudisciplinary team including, physicians, speech therapists, occupational therapists, psychologists, nurses, orthotists, podiatrists, social workers etc.</b></li> <li>• choose and implement Physiotherapy appropriately interventions for each pediatric disorder.</li> <li>• <b>Comprehend the role of digital physiotherapy and advanced technology in the assessment and management of wide range if pediatric disorders(biomechanical assessment, orthotic evaluation and intervention, digital electronic approaches)</b></li> </ul> <p>Upon completion of the laboratory part of the course, the student is expected to be able to:</p>				

	<ul style="list-style-type: none"> <li>• demonstrate competence in subjective and objective evaluation and the pediatric patient with musculoskeletal problem or disorder <b>using the ICF approach,</b></li> <li>• demonstrates adequacy in the subjective and objective evaluation of the pediatric patient with a neurological problem or disorder <b>using the ICF approach.</b></li> <li>• demonstrate adequacy in the subjective and objective evaluation of the pediatric patient with a cardiac problem or disorder <b>using the ICF approach.</b></li> <li>• demonstrate adequacy in the subjective and objective evaluation of the pediatric patient hospitalized in the ICU</li> <li>• demonstrate adequacy in clinical reasoning and the way of selecting and applying research-based therapeutic techniques in the whole range of diseases and injuries of the musculoskeletal, cardiopulmonary and neurological pediatric patient <b>according to the ICF approach.</b></li> <li>• synthesize and apply the appropriate methods of physiotherapeutic treatment, based on the findings of the clinical evaluation, the existing techniques and the research documentation of these techniques,</li> <li>• demonstrate competence in the application of research-documented techniques and methods of rehabilitation of diseases and injuries of the musculoskeletal, cardiopulmonary and neurological pediatric patient</li> <li>• <b>demonstrate knowledge of digital physiotherapy techniques and technologies in the assessment and treatment of pediatric disorders</b></li> <li>• know the role of the physiotherapist in the multidisciplinary rehabilitation team of pediatric diseases and injuries</li> <li>• be able to conduct a basic biomechanical evaluation and select the appropriate orthotic treatment of children with neurological neurological and musculoskeletal disorders and deformities</li> <li>• demonstrate competence in communication and cooperation with the guardians-relatives of pediatric patients within the framework of the ethics and ethical regulations;</li> </ul>		
<b>Prerequisites</b>	None	Co-requisites	None
<b>Course Content</b>	<ul style="list-style-type: none"> <li>• <b>Assessment and clinical reasoning methodology of pediatric patients with musculoskeletal, cardiorespiratory and neurological disorders using the ICF model</b></li> <li>• <b>Theories of motor development and motor control</b> Implementation of theory/ evaluation- measurement/ problem solving</li> <li>• <b>Typical development in infancy and childhood</b> Developmental Milestones, Reflexes and reactions</li> <li>• <b>Defining disability and the use of ICF-CY</b> Clinical reasoning Evidence-based practice and decision making</li> <li>• <b>Neuroplasticity and motor learning</b> Basic principles of neuroplasticity Sensorimotor system/disorders Task-oriented training/ applications</li> <li>• <b>Neuro-motor/neuro-developmental disorders</b> Cerebral palsy, spinal cord injury, brachial plexus palsy Cognitive and mental disorders disorders, developmental</li> </ul>		

	<p>coordination disorders, autism spectrum Assessment, selection of tests/measurements and methods of intervention</p> <ul style="list-style-type: none"> <li>• <b>Neuromuscular disorders</b> Muscular Dystrophies, Spinal muscular atrophy Assessment, selection of tests/measurements and methods of intervention</li> <li>• <b>Musculoskeletal disorders</b> Torticollis, plagiocephaly, idiopathic clubfoot, arthrogryposis, spine deformities, amputations, orthopedic disorders Assessment, selection of tests/measurements and methods of intervention Fractures, congenital dislocations</li> <li>• <b>Respiratory and congenital heart disorders</b></li> <li>• Cystic fibrosis, bronchiolitis, asthma, congenital heart diseases Assessment, selection of tests/measurements and methods of intervention</li> <li>• <b>Neonatal intensive care unit/early intervention</b> Respiratory, cardiovascular, neurological and gastrointestinal complications in the ICU The role of the physical therapist in ICU/ physical therapy intervention</li> <li>• <b>Pediatric physiotherapy in school setting</b> Service delivery models/ least restrictive environment The personalized training program. Evaluation and targeting</li> <li>• <b>Family –centered approach/ The role of family</b> Counseling, coaching and self-management</li> <li>• <b>Physical activity and exercise in children with disabilities</b> Evaluation/planning of exercise programs The role of the pediatric physiotherapist</li> <li>• <b>Digital physiotherapy and advanced technology in the assessment and management of wide range of pediatric disorders(biomechanical assessment, orthotic evaluation and intervention, digital electronic approaches</b></li> <li>• <b>Biomechanical assessment and Orthotic management of children with neurological and musculoskeletal disorders and deformities.</b> Foot varus-valgus deformity Leg Length Difference Gait disturbances</li> <li>• <b>Collaboration with multidisciplinary team including, physicians, speech therapists, occupational therapists, psychologists, nurses, orthotists, podiatrists, social workers etc.</b></li> </ul>
<b>Teaching Methodology</b>	<p><b>Theory</b></p> <p>The course is delivered to the students through lectures, using computer-based presentations programmes. Case Studies, Discussion, Questions / Answers are also used depending on the content of the lecture. Lecture notes and presentations are available online for use by students in combination with</p>

	<p>textbooks. Relevant material published in international scientific journals is also used to follow the latest developments related to the subject of the course.</p> <p><b>Laboratory</b></p> <p>During the laboratory courses, students develop their clinical skills in skill trainers and patient simulators so that they can successfully and safely apply them in a real clinical environment.</p>
<b>Bibliography</b>	<p><b><u>Textbooks:</u></b></p> <p>Palisano R., Orlin M., Schreiber J. (2021) Campbell's Physiotherapy for Children, BROKENHILL PUBLISHERS LTD,</p> <p>Scrutton D., Damiano D., Mayston M. (2009) Management of movement disorders in children with cerebral palsy. Parisianos Publications,</p> <p>Levitt S. (2014) Treatment of Cerebral Palsy and Motor Retardation. 5th edition, Parisianos Scientific Publications.</p> <p>Christara – Papadopoulou A., Georgiadou A., Papadopoulou (2014). Physiotherapy in Pediatrics Salto Publications.</p> <p>Martin S., Kessler M. (2015) Neurologic interventions for physical therapy. Elsevier; 3rd edition,</p> <p>Stokes M., Stack E. (2016) Clinical management for neurological conditions. 3rd edition. Parisian Scientific Publications.</p> <p>Tecklin J. Pediatric physical therapy. (2013) Lippincott Williams &amp; Wilkins; 5<sup>th</sup> edition.</p> <p>Umphred D. A. (2012) Neurological Rehabilitation. 6th edition. Elsevier - Mosby.</p> <p>Shumway-Cook A., Woollacott M. (2012) Motor Control. From Research to Clinical Practice. 3rd edition. P. C. Paschalidis Publications.</p> <p>O' Conor J., Yu E. (2001) Progressing: an education manual for children with mobility problems. Athens: Parisianos Publications S.A.,</p> <p>Panteliadis Chr., Syrigou-Papavasiliou A., Diamantopoulos N. (1998) Cerebral Palsy – past, present, future. Yiachoudis – Yapouli Publications.</p> <p>Barnes M., Johnson G. (2008) Upper motor neuron syndrome and spasticity. Parisianos Publications.</p> <p>Nichols-Larsen D. (2017) Neurological Rehabilitation. Neuroscience and Neuroplasticity in Applied Physiotherapy. Medical Konstantaras Publications,</p> <p><b><u>References:</u></b></p>

	<p>Rowland JL, Fragala-Pinkham M, Miles C, O'Neil ME. (2015) The scope of pediatric physical therapy practice in health promotion and fitness for youth with disabilities. <i>Pediatr Phys Ther.</i> Spring;27(1):2-15.</p> <p>Kim, Yu-Na, et al. (2022) "The role of physiotherapy in the management of functional neurological disorder in children and adolescents." <i>Seminars in Pediatric Neurology.</i> Vol. 41. WB Saunders, Spring;27(1):2-15.</p> <p>Sharma, Abhishek, Sakshi Vats, and Riya Gupta. (2022) "Effectiveness of Physiotherapy Intervention in Managing Patient's Developmental Dysplasia of the Hip: a Scoping Review." <i>SN Comprehensive Clinical Medicine</i> 4.1: 1-9.</p> <p>Te Velde, Anna, et al. (2022). "Neurodevelopmental Therapy for Cerebral Palsy: A Meta-analysis." <i>Pediatrics</i> 149.6.</p>
Assessment	<p><b><u>Continuous Assessment (50%):</u></b></p> <p>The assessment may include any combination of the following:</p> <ul style="list-style-type: none"> <li>• <b>Written and/or oral</b>, and it consists of multiple – choice, short answer, open ended questions and/or essay questions, that align with the learning outcomes, in order to assess the theoretical knowledge gained. The questions ensure that students will demonstrate a deep understanding of the subject matter and apply their knowledge to solve problems or analyse scenarios.</li> <li>• <b>Assignments and projects</b> provide opportunities for students to apply their theoretical knowledge in practical ways. The assignments are designed in a way that require critical thinking, research, analysis, and synthesis of information. Projects can be individual, self directed learning or group-based and should align with the learning outcomes. Students are evaluated on the quality of their work, the depth of understanding displayed, and their ability to effectively communicate their ideas. Assignments and projects may be individual or group work.</li> <li>• Use of <b>case studies or problem-solving exercises</b> to assess how students can apply theoretical knowledge to real-life situations. Students are presented with scenarios that require analysis, critical thinking, and the application of theoretical concepts and they are assessed based on their ability to perform verbal presentations, viva voce examinations, identify and evaluate relevant information, propose solutions, and provide justifications for their choices.</li> <li>• <b>Online quizzes or interactive assessments:</b> Online quizzes or interactive assessments, reflective writing can be used through the Moodle platform, to create quizzes with various question formats. These assessments can be self-paced or timed, and immediate feedback can be provided to students.</li> <li>• <b>Classroom discussions and debates:</b> Students engage in classroom discussions and debates to assess their theoretical knowledge. Active participation is encouraged to hone their critical thinking skills by posing open-ended questions and facilitating dialogue.</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Peer and self-assessment:</b> Students are assigned to review and provide feedback on each other's work, encouraging them to critically evaluate their peers' understanding and provide constructive suggestions.</li> </ul> <p><b>Laboratory</b> evaluation consists of assessment of the expected skills and competences, critical thinking, problem-solving and teamwork skills. During the laboratory sessions, students are closely observed as they engage in the assigned tasks and note is taken regarding the actions, approach and any relevant observations that demonstrate their understanding of the subject matter and application of skills. After assessing the laboratory work, constructive feedback is provided to students. Their strengths and areas for improvement are highlighted, linking them back to the learning outcomes to help students understand their progress and guide them towards further development. Depending on the nature of the laboratory work, peer assessment can be incorporated, where students evaluate each other's work based on the established criteria to promote self-reflection, collaboration, and a deeper understanding of the subject matter.</p> <p><b>Final Exam (50%):</b> comprehensive final exam, to assess students' overall theoretical knowledge. These assessment covers a broader range of topics and learning outcomes from the entire program of study, to gauge the students' understanding and integration of knowledge across different areas.</p>
<b>Language</b>	Greek / English