

<b>Course Title</b>	<b>Physiotherapy of Musculoskeletal Disorders I</b>				
<b>Course Code</b>	PHYS305				
<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 Spyridon Athanasopoulos, Dr Georgios Koumantakis, Michail Pantouveris				
<b>ECTS</b>	6	<b>Lectures / week</b>	2	<b>Laboratories/week</b>	2
<b>Course Purpose</b>	The aim of the course is to expand the student's knowledge and clinical skills in the assessment and treatment of neuro-musculoskeletal dysfunctions of the upper extremity joints. The course incorporates the basic principles of clinical reasoning and evidence-based clinical practice, while placing particular emphasis on the development of critical thinking during the evaluation, categorization, prognosis, and treatment of complex neuro-musculoskeletal dysfunctions of the upper extremity. In addition, the aim of the course is to guide students to understand the mechanisms of induction of musculoskeletal injuries of the upper extremity, the distinction between pathology and dysfunction as well as to adjust their treatment with the aim of the functional rehabilitation of the patient and the elimination of individual symptoms.				
	<b>Course Learning Outcomes</b>				<b>Aligned PLOs</b>
<b>Learning Outcomes</b>	Upon completion of the theoretical part of the course, students are expected to be able to:				
	1. Know the mechanisms of musculoskeletal injuries of the upper extremities and their healing stages.				K1-K2
	2. Recognize and understand the influence of predisposing and aggravating factors on musculoskeletal disorders of the upper extremities.				K1 & C1
	3. Collect the subjective information from the patient and record it in a scientific way.				S1-S3
	4. Recognize the pathology of musculoskeletal problems and correlate it with the clinical picture of the patient.				C1, AN1-AN3

	5. Perform a properly structured physical examination based on the history of the condition and the latest scientifically substantiated data.	S1-S3
	6. Provide ergonomic and other advice to deal with predisposing and aggravating factors.	AP1-AP4
	7. Design a comprehensive intervention program to treat the symptoms and the functional rehabilitation of the patient.	S1-S3
	8. Identify risk factors for chronicity and adjust their intervention accordingly.	C1-C3, E1-E3
	9. Develop the ability to evaluate research data on musculoskeletal rehabilitation in order to deepen and renew his knowledge in this field.	C4 & S3
	10. Underline the role of digital physiotherapy approaches in the assessment and management of musculoskeletal disorders (electronic applications, smartphone applications etc)	K1, AP3, E3
	11. Integrate evaluation findings in their clinical reasoning based on the ICF model of musculoskeletal and movement related dysfunctions.	E1 & E2
	Upon completion of the laboratory part of the course, the learner is expected to be able to:	
	12. Perform a structured clinical examination of the musculoskeletal problems of the upper extremities taking into consideration the ICF model of musculoskeletal and movement related dysfunctions (bone, muscle weakness, joint pain etc)	S1-S3
	13. Recognize the pathology and distinguish it from the dysfunction of the musculoskeletal system.	K1 & C1
	14. Classify the problems into categories according to their clinical picture.	C1 & C2
	15. Recognize deviations from normal to the pattern of posture and movement in all joints of the upper extremity.	C1 & E1
	16. Choose documented means of intervention for the progressive restoration of the normal loading capacity of the tissues of the upper extremity.	E1- E4

	17. Design and execute structured functional rehabilitation programs for upper limb diseases and injuries.		S1 & AP1
	18. Apply digital physiotherapy approaches in the assessment and management of musculoskeletal disorders (electronic applications, smartphone applications etc)		AP3, E3
	19. Reassess the effect of their therapeutic intervention with documented means of evaluating the result and modify their intervention accordingly.		E1-E3
	20. Suggest practical advice to deal with predisposing and aggravating factors.		S1 & E1
<b>Prerequisites</b>	None	Co-requisites	None
<b>Course Content</b>	<ul style="list-style-type: none"> <li>• <b>Assessment of spinal musculoskeletal disorders, clinical reasoning and ICF model of Dysfunction</b></li> <li>• Correct posture disorder Antalgic posture</li> <li>• Spinal Deformities Kyphosis, Lordosis, Scoliosis, Kypho-scoliosis, evaluation, therapeutic techniques, orthotic treatment</li> <li>• Dysfunctions of Upper Cervical Spine Dysfunctions such as cervicogenic headache, cervicogenic dizziness, upper cervical spine instability of the cervical spine of SS</li> <li>• Dysfunctions of Lower Cervical Spine Dysfunctions such as cervical radiculopathy, Zygoapophyseal joint syndrome and cervical discopathy</li> <li>• Dysfunctions of Thoracic Spine and differential diagnosis with other dysfunctions of other organs, chest outlet syndrome</li> <li>• Dysfunctions of Lumbar Pain (epidemiology, etiology, categorization, evaluation and rehabilitation), common lumbar spine dysfunctions of with particular reference to lumbar radiculopathy, discopathy and zygoapophyseal joint syndrome</li> <li>• Dysfunctions of the Sacrococcygeal Spine of SS Sacroiliac Pain (epidemiology, etiology, categorization, evaluation and rehabilitation), common lumbar spine dysfunctions</li> <li>• <b>Advance and digital technology in the assessment and treatment of patients with musculoskeletal conditions and deformities of the spine (smartphone assessment applications, dynamometers)</b></li> </ul>		
<b>Teaching Methodology</b>	<b>Theory</b> 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 textbooks. Relevant material published in international scientific journals is also used to follow the latest developments related to the subject of the course.		

	<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>Stevenson, Kay, et al. "Mobilizing physiotherapy knowledge: Understanding the best evidence and barriers to implementation of hydrotherapy for musculoskeletal disease." <i>Physiotherapy theory and practice</i> 39.2 (2023): 343-350.</p> <p>Naylor, J., Killingback, C., &amp; Green, A. (2023). What are the views of musculoskeletal physiotherapists and patients on person-centred practice? A systematic review of qualitative studies. <i>Disability and rehabilitation</i>, 45(6), 950-961.</p> <p>Petty, N., &amp; Moore, A. (1998). <i>Neuromusculoskeletal examination and assessment-a handbook for therapists</i>. Churchill Livingstone</p> <p>Petty, N. J., &amp; Rushton, A. (2004). Principles of joint treatment. <i>Principles of neuromusculoskeletal treatment and management: a guide for therapists</i>, 116-118.</p> <p>Hengeveld, E., Banks, K., Maitland, G. D., &amp; Wells, P. (2005). <i>Maitland's peripheral manipulation</i>. Butterworth-Heinemann</p> <p>Schomacher, J., Grimsby, O., &amp; Kaltenborn, F. (2014). <i>Special Mobilization Techniques in the Musculoskeletal System, Evaluation and Treatment</i>. Translation-Editing by Triantafyllopoulos G., Stribakos N., Billy E.</p> <p>American College of Sports Medicine. (2012). <i>ACSM's resource manual for guidelines for exercise testing and prescription</i>. Lippincott Williams &amp; Wilkins.</p> <p>Hoogenboom, B., Voight, M., &amp; Prentice, W. (2016). <i>Physiotherapeutic Interventions in the Musculoskeletal System – Techniques for Therapeutic</i></p>

Exercises. Translated from English Triantafyllopoulos, G., Athens: Konstantaras Medical Publications.

Houglum, P. A. (2018). KINESIOTHERAPY Therapeutic Exercises for Musculoskeletal Disorders. • Editors: Dimitrios G. Mandalidis, Savvas P. Mavromoustakos, Nikolaos S. Stribakos, Konstantinos A. Fousekis. Paschalidis Publications.

Kisner, C., & Colby, L. A. (2021). Therapeutic exercises Basic principles and techniques. Konstantaras Publications.

Norm A., Hanson B. (2000) Therapeutic exercise in water. Parisianos Publications.

Athanasopoulos S. (1993) Kinesitherapy, Parisianos Publications.

Amundsen, LR. (1999) Effects of age on joints and ligaments. In Kauffman, TL (ed): Geriatric Rehabilitation Manual. New York: Churchill Livingstone, pp 14–16.

Lieber, RL (2010) Skeletal Muscle Structure, Function, and Plasticity: The Physiological Basis of Rehabilitation, ed. 3. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins

### References

Zito, G., Jull, G., & Story, I. (2006). Clinical tests of musculoskeletal dysfunction in the diagnosis of cervicogenic headache. *Manual therapy*, 11(2), 118-129.

Anderson, BD, and Spector, A. (2000) Introduction to Pilates-based rehabilitation. *Orthop Phys Ther Clin North Am* 9:395–411.

Bandy, WB, and Irion, JM. (1994) The effects of time on static stretch on the flexibility of the hamstring muscles. *Phys Ther* 74:845–850.

Bandy, W, Irion, J, and Briggler, M. (1997) The effect of time and frequency of static stretch on flexibility of the hamstring muscle. *Phys Ther* 77:1090–1096.

Renan-Ordine, R., Albuquerque-Sendín, F., Rodrigues De Souza, D. P., Cleland, J. A., & Fernández-De-Las-Penas, C. (2011). Effectiveness of myofascial trigger point manual therapy combined with a self-stretching protocol for the management of plantar heel pain: a randomized controlled trial. *Journal of Orthopaedic & Sports Physical Therapy*, 41(2), 43-50.

	Assessment Method and Description	Weight	Aligned CLOs
Assessment	<p><b>Group 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.</p>	15%	1-20
	<p><b>Online quizzes:</b> Online quizzes, reflective writing can be used through the Moodle platform, to create quizzes with various question formats. These assessments will be self-paced, and immediate feedback can be provided to students.</p>	15%	1-11
	<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>	20%	12-20
	<p><b>Final Exam:</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>	50%	1-20
Language	Greek / English		