

Course Title	Clinical reasoning and Rehabilitation Planning				
Course Code	DLSEM521				
Course type	Compulsory				
Level	Master				
Year / Semester of study	1 st or 2 nd / 2 nd or 3 rd				
Teacher's Name	Dr Emmanuel Papadopoulos & Dr Christos Savva				
ECTS	10	Lectures / week		Laboratories/week	
Course Purpose	The aim of the course is to develop advanced skills in clinical reasoning and rehabilitation planning, with a specific emphasis on assessment and decision-making processes in sports physiotherapy. Students will learn to perform comprehensive physiotherapy assessments of sports injuries using clinical tools and the latest technology. They will also learn to systematically record their findings to organize appropriate treatment plans based on current research evidence. The course will equip students to apply the principles of clinical reasoning and utilize tools to elicit and record information on the functioning and disability of individuals, enabling them to make well-informed decisions.				
Learning Outcomes	<p>Upon successful completion of the course, students will be able to:</p> <ul style="list-style-type: none">• Apply the process of in-depth clinical reasoning in the practice of sports physiotherapy for a wide range of injuries and sports participants, based on the International Classification of Functioning model (ICF) of dysfunction and disability.• Conduct a detailed physiotherapeutic assessment through clinical reasoning and identify problems from various systems.• Critical assess a differential diagnosis and propose documented treatment protocols in simple and complex clinical cases.• Interpret, critically analyze, and apply the results of research related to the problem they are investigating in clinical practice.• Develop appropriate clinical reasoning methodologies depending on the condition, injury, and ICF domains.• Design a progressive and specialized program that integrates clinical reasoning, ensuring safety and suitability for musculoskeletal injuries, consistent with recent research data• Evaluate and apply various methodologies of clinical reasoning for making therapeutic decisions in simple and complex sports injury cases.• Evaluate the effectiveness of their communication and educational strategies with patients to ensure optimal collaboration and understanding of therapeutic plans.				
Prerequisites	None		Corequisites		
Course Content	Section 1	In this module, students will be involved in the methodology			

		and models of clinical reasoning in sports injuries involving a systematic approach to diagnose, manage, and prevent injuries in athletes. This process integrates knowledge from various domains such as anatomy, physiology, biomechanics, and pathology, along with clinical experience and patient-specific factors. The outline of the clinical reasoning learning process in sports injuries will cover the patient history, the physical examination, the differential diagnosis, sports injuries imaging, the management, prevention and rehabilitation planning, exercise prescription and the criteria of safe returning to the sport activity. An introduction will take place on analysis and differences of injuries occurring in different sports and groups of athletes according to level, skill, age, gender, disease and acute or permanent disability of the patient.
	<u>Section 2</u>	In the following two weeks, emphasis will be given to the clinical reasoning process in the assessment of sports injuries of the upper and lower extremities occurring in elite athletes. This involves a specialized approach to diagnosis and treatment, considering their unique physical demands, psychological resilience, and the need for optimal performance. Clinical reasoning in elite sports athletes will involve a systematic and sophisticated approach to diagnosing, treating, exercise prescription and managing the health and performance of athletes. This process is crucial for ensuring that athletes can perform at their highest levels while minimizing the risk of injury and optimizing recovery.
	<u>Section 3</u>	In this section students will indulge into the clinical reasoning process of amateur and senior sports participants and how this approach differs from elite athletes, as compared to the demand, intensity and sport participation expectations. Differences in the sports injuries assessment approach in amateur and senior sports participants as compared to top level athletes will be emphasized. Furthermore, clinical reasoning methodology of goal setting and treatment planning will be studied taking into account the sports requirements and the resilience of biological tissues according to age and level of sport participation. Students will become familiar with the process of systematic evaluation of differential diagnosis and recording of findings, and the establishment of rehabilitation goals (YASO), clinical reasoning and design of special exercise programs and methods for the prevention of sports injuries in high-risk amateur and senior athletes.
	<u>Section 4</u>	In this module, students will study the principles of assessment and clinical reasoning of sports injuries occurring in children and adolescents. They will specifically study the anatomical differences between children and adult athletes and the specific risks and vulnerability to injury and the consequences to the development of the musculoskeletal system. Special attention will be given to the unique physiological and developmental characteristics which involve the growth plates, the bone strength and density and the muscolotendinous unit.

		Consideration of the specific diagnostic and assessment tools will take place in order to ensure a safe and effective approach in the prevention and management of children and adolescent injuries, in order to guarantee safe participation with the preservation of uninterrupted skeleton development
	Section 5	In the next two weeks students will be familiarized with clinical reasoning methodology of the injured athlete with special needs including physical, mental, permanent and temporary disabilities. Students will study the most common sports injuries occurring in this group of sports participants and to familiarize with clinical reasoning of their approach, taking into account the unique factors contributing to injuries in this population. Special athletes may include those with physical disabilities, intellectual disabilities, or those participating in adaptive sports. Students will learn how to follow a structured evidence based assessment approach including the type of somatic or intellectual disability, sport and level of participation, in order to ensure safe participation.
	Section 6	Having explored all the above differences in the clinical reasoning process of a wide range of sports participants, this module concentrates with the familiarization of students with the most common injuries occurring in different sports and how this affects their clinical reasoning approach according to the specific demands and risk factors of different sports activities. For example what could the differences in the assessment and treatment planning and rehabilitation strategy between a rugby player and a tennis player? Is the severity of possible injury comparable and how this may affect the approach of the sports physiotherapist? Differences in the clinical reasoning and assessment approach in injuries occurring in contact and non contact sports will be considered and the specific injury risk factors for each sport under these two categories.
Teaching Methodology	<p>The course is structured and developed based on the principles of distance learning, good practices as well as the guidelines of the Evaluation Body and finally the Pedagogical Framework developed and implemented by our University. Also, through the design and development of distance learning courses, synchronous and asynchronous interaction, communication and collaboration are taken into account at 3 levels: 1) between instructor and student, 2) between students, and 3) between students and content.</p> <p>The course is taught entirely online through the electronic platform Moodle LMS. Mandatory, optional and additional bibliography (e.g. books, articles, links, open educational resources, case studies) in combination with notes, course presentations and suggestions for reading study (bibliography) are</p>	

	<p>available to students through an electronic platform. Also, a variety of appropriate educational material is given through the online platform in the form of presentations with notes, presentations with narration, interactive presentations and videos, interactive learning and clinical scenarios, and case study presentations, gamification activities, avatars, digital twins, audio files, online quizzes). Various online tools, new and emerging technologies are being exploited: communication tools (e.g. video conferencing, chat rooms), collaboration tools (e.g. discussion forums, blogs, wikis), as well as content development tools. Students are encouraged through the platform and various technological tools to interact with their fellow students and the instructor, in order to become active members of the online learning community created within the framework of the course. Finally, with the use of various technological tools, each student is expected to create his own online learning community. More information about distance learning at Frederick University, the Pedagogical Background developed and implemented, as well as the toolkit used, can be found at the following link.</p> <p>About Distance Learning - Frederick University</p>
Bibliography	<p>Jones, Mark A., and Darren A. Rivett. Clinical Reasoning in Musculoskeletal Practice-E-Book: Clinical Reasoning in Musculoskeletal Practice-E-Book. Elsevier Health Sciences, 2018.</p> <p>Biggs, J., Jones, M. A., Loftus, S., & Christensen, N. (2018). Clinical Reasoning in the Health Professions EBook. Elsevier Health Sciences.</p> <p>Jones, Mark A., and Darren A. Rivett. (2003) Clinical Reasoning for Manual Therapists E-Book. Elsevier Health Sciences.</p> <p>Brotzman SB, Manske RC. (2011) Clinical Orthopaedic Rehabilitation. An Evidence-Based Approach. 3rd Edition. Philadelphia, PA: Mosby.</p> <p>Butler S. David. (2006) The Sensitive Nervous System. 1st Edition. Australia: Noigroup.</p> <p>Canale ST, Beaty (2016) JH. Campbell's Operative Orthopaedics. 13th Edition. Philadelphia: Mosby.</p> <p>Cyriax J. (2003) Orthopaedic Medicine. Part I: Clinical examination and diagnosis. USA: OPTH. .</p> <p>Hattam P, Smeatham A. (2010) Special Tests in Musculoskeletal Examination: An evidence-based guide for clinicians, (Physiotherapy Pocketbooks). 1st Edition. London: Churchill Livingstone.</p> <p>Higgs, J., Jones, M.A., Loftus, S. & Christensen N. (2008). Clinical reasoning in the Health Professions (3rd ed.). London: Elsevier Butterworth-Heinemann. .</p> <p>Hoppenfeld S: Ορθοπαιδική Νευρολογία. Αθήνα: Εκδόσεις Παρισιάνου Α.Ε., (2005). 11. Kisner C, Colby L. Therapeutic Exercise: Foundations and Techniques. 6th Edition. Philadelphia. Davis Plus, 2012.</p> <p>Kisner C, (2003) Therapeutic Exercises. Athens: Medical & Scientific</p>

	<p>Publications SIOKIS.</p> <p>Magee D. Orthopaedic physical assessment. 5th Edition. W.B Saunders Company, (2008). 13. Melzack R & Wall P. Textbook of pain. 6th Edition. London: Churchill Livingstone,</p> <p>Mattingly, C. & Fleming, M.H. (1994). Clinical reasoning: Forms of inquiry in a Therapeutic Practice. Philadelphia:</p> <p>Miller M, Hart J. Review of Orthopaedics. 6th Edition. Philadelphia, PA: Saunders Elsevier, (2012).</p> <p>Petty J. Nichola. (2013) Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists, (Physiotherapy Essentials). 4th Edition. Edinburgh: Churchill Livingstone·</p> <p>Solomon L, Warwick D, Nayagam S. (2010) Apley's System of Orthopaedics and Fractures. 9th Edition. London: Hodder Arnold.</p> <p>Snyder KT, Goodman C. (2007) Differential diagnosis in physical therapy. 4th Edition. Philadelphia: W.B. Saunders Company.</p> <p><u>References</u></p> <p>Ryder, Dionne, Matthew Low, and Neil Langridge. "Clinical Reasoning and Assessment: Making Sense of Examination Findings." Petty's Musculoskeletal Examination and Assessment-E-Book (2023): 143.</p> <p>Kleiner, Michelle J., et al. "An integrative review of the qualities of a 'good' physiotherapist." Physiotherapy Theory and Practice 39.1 (2023): 89-116.</p> <p>Wijbenga M, Bovend'Eerd T, Driessen E. (2019) Physiotherapy Students' Experiences with Clinical Reasoning During Clinical Placements: A Qualitative Study, Health Professions Education, Volume 5, Issue 2, Pages 126-135, ISSN 2452-3011, https://doi.org/10.1016/j.hpe.2018.05.003.</p>
Assessment	<p>The evaluation of the course includes activities of continuous / formative assessment (formative), self-evaluation (self-evaluation and debriefing / final evaluation (summative). Specifically, the evaluation of this course includes the following: final written exam, 2 evaluation assignments, 2 evaluative online interactive discussions, various weekly educational activities such as interactive activities, interactive presentations/ videos and self-assessment activities.</p> <p>From the above, the following are scored:</p> <ul style="list-style-type: none"> • Final exam (50%) • 2 evaluation papers (20% + 15% = 35%) • 2 online interactive activities (7.5% + 7.5% = 15%) <p>All assignments (except the final exam) are assigned and delivered to the online platform, as well as a plagiarism check through the turnitin tool. The final exam is developed by the instructor and completed by the students on a special platform used exclusively for the exams.</p>



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THE CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION



Language	English / Greek
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