

Course Title	Physiotherapy in sports				
Course Code	PHYS403				
Course Type	Compulsory				
Level	Bachelor (Level 1)				
Year / Semester	4 th / Fall				
Instructor's Name	Manolis Papadopoulos, Dimitris Sokratous				
ECTS	6	Lectures / week	2	Laboratories/week	2
Course Purpose	<p>The aim of the course is to educate students in the provision of first aid in the field of injury as well as in the evaluation, prevention and documented physiotherapeutic treatment of acute and chronic sports injuries and syndromes, in the sports area, in the clinic and in the physiotherapy center. The main objective is to be informed about the promotion of the acceleration of the healing process, rehabilitation and safe return to the pre-injury competition level and to familiarize with the application and action of physical agents and exercise as well as the expected results, in the various stages of rehabilitation. Also, students will learn the clinical picture of sports injuries, collagen tissues, muscle injuries, fractures and cartilage lesions as well as the parameters of performance improvement (muscle strength, endurance, balance, cardiorespiratory endurance, etc.).</p>				
Learning Outcomes	<p>After completing the course, students should:</p> <ul style="list-style-type: none"> • Have a comprehensive view and knowledge of the role of the sports physiotherapist • Perform a detailed physiotherapy assessment of sports injuries and disorders and apply clinical reasoning skills in the implementation of interventions, based on recent evidence and the ICF model of musculoskeletal dysfunction (acute and chronic sports injuries, overuse injuries, post operative rehabilitation etc) • Cooperate with the rehabilitation team members • Be able to provide first aid to the injured in the sports area (CPR, bandaging, immobilization, safe transport). • To be able, depending on the phase of the healing process, to choose the corresponding intervention with physical means and exercise to reduce pain, swelling, inflammation and minimize the effects of immobilization. • Know the clinical and laboratory tests for assessing the progress of functional rehabilitation and return to pre-injury levels of fitness, including the contemporary advanced technology and digital assessment and treatment techniques (digital biomechanical analysis, muscle function evaluation, diagnostic ultrasound assessment, etc) 				

	<ul style="list-style-type: none"> • To be able to assist and psychologically support the athlete in fully reintegrating into his sport. • They have the ability to formulate programs both for the prevention and for the treatment of the most frequent injuries of athletes. • To recognize the differences of rehabilitation of overuse syndromes from acute injuries • To be able, after continuous evaluation, to individually choose the program that suits each injured athlete in relation to the type of sport, the training period, external conditions, previous injuries, age and gender. <p>Upon completion of the laboratory course, the student is expected to be able to:</p> <ul style="list-style-type: none"> • Conduct a detailed assessment of sports injuries and syndromes with valid and reliable clinical work • Present skills in clinical trials for the evaluation of articular and ligament instability, intra-articular and extra-articular injuries • Adequately perform pre-competitive sports assessment and identification of risk factors. • Demonstrate knowledge and skill in first aid to the injured person in the sports area (CPR, bandaging, immobilization, safe transport). • demonstrate adequacy in the selection of the appropriate intervention with natural means and exercise to reduce pain, swelling, inflammation and minimize the effects of immobilization. • Demonstrate knowledge and skill in differential diagnosis and rehabilitation of overuse syndromes from acute injuries • Demonstrate knowledge of clinical and laboratory tests for assessing the progress of functional rehabilitation and return to pre-injury levels of fitness, including the contemporary advanced technology and digital assessment and treatment techniques (digital biomechanical analysis, muscle function evaluation, diagnostic ultrasound) 		
Prerequisites	None	Co-requisites	None
Course Content	<p>Theory</p> <ul style="list-style-type: none"> • Introduction to the Sports Physiotherapy course - Epidemiology of injuries by competition and sport. • Pre-season assessment • Types and mechanisms of sports injuries. <ul style="list-style-type: none"> - Acute injuries: Sprains Fractures Bruises - Overuse syndromes: Stress fractures, Tendonitis. - Systematic differential assessment process - record of findings - achievement of rehabilitation goals (SOAP), clinical reasoning. • Immediate treatment in the sports area: CPR (if necessary), bandaging, ice application, splints, safe transport. • Clinical treatment: ways to limit or control the swelling, • reducing or minimizing pain, maintaining joint range of motion, maintaining muscle function, maintaining cardiorespiratory endurance, similar functional activities • The effects of immobilization, surgery and lack of exercise on the body's biological materials and systems. 		

	<ul style="list-style-type: none"> • Physiotherapy intervention in the phases of the healing process of fractures, collagen tissue injuries, muscle injuries and cartilage damage. • Basic principles of functional rehabilitation and functional tests in the sports field • Progressive rehabilitation program to maximize all physical condition parameters: Clinical reasoning - rational and scientifically documented (evidence based) use of rehabilitation tools • Proprioceptive and Neuromuscular Rehabilitation -Traumatic effects on proprioception and neuromuscular coordination: Motor sensation, Dynamic joint stability, Prepared & reactive muscle activity / control, Conscious & unconscious functional motor patterns. • Closed and open range of motion exercises, • Plyometric training • Functional rehabilitation in the water. • Functional rehabilitation of athletes based on the individualized needs of each sport - Criteria for return to sport - Psychological preparation for rejoining competitions. • contemporary advanced technology and digital assessment and treatment techniques (digital biomechanical analysis, muscle function evaluation, diagnostic ultrasound • Prevention of sports injuries. <p>Laboratory</p> <ul style="list-style-type: none"> • Practical application of cardiorespiratory resuscitation (CPR) in preforms. • Practical application in sports bracing of all peripheral joints and the use of protective guards. • Taping- kinesiotaping and strapping techniques • Planning and practical implementation in the laboratory of rehabilitation programs for the most common injuries: <ul style="list-style-type: none"> - The knee area: rupture of the anterior cruciate ligament after surgical or conservative treatment) rupture of menisci, medial and external lateral ligaments, quadriceps tendinopathy - Ankle sprain - Shoulder dislocation, tendinopathy of the supraspinatus - Finger and elbow injuries - Spine and trunk • Also make practical application in designing and executing rehabilitation programs of the most common overuse syndromes in the various body parts and biological structures. • Also perform functional rehabilitation exercises for upper-lower extremity injuries in athletes • Working groups and case studies per lab course
Teaching Methodology	<p>Theory</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>Laboratory</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>
Bibliography	<p><u>Textbooks:</u></p> <p>Fousekis, K. (2015). Applied Sports Physiotherapy. Cyprus: Paschalides.</p> <p>Porter, S., Southorn, N., & Wilson, J. (Eds.). (2020). A Comprehensive Guide to Sports Physiology and Injury Management: An Interdisciplinary Approach. Elsevier Health Sciences.</p> <p>Prentice, W., Athanasopoulos, S., & Katsoulakis, K. (2007). Sports injury rehabilitation techniques. Athens: Parisianou.</p> <p>Papadopoulos, K., & Richardson, M. (Eds.). (2021). The Sports Rehabilitation Therapists' Guidebook: Accessing Evidence-Based Practice. Routledge.</p> <p>Brukner, P. (2012). Brukner & Khan's clinical sports medicine. North Ryde: McGraw-Hill.</p> <p>Kolt, G., & Snyder-Mackler, L. (Eds.). (2007). Physical therapies in sport and exercise. Elsevier Health Sciences.</p> <p>Madden, C., Putukian, M., McCarty, E., & Young, C. (2013). Netter's Sports Medicine E-Book. Elsevier Health Sciences.</p> <p><u>References</u></p> <p>Kemp, J., Mendonça, L. D. M., Mosler, A. B., Bizzini, M., Thorborg, K., Wilson, F., ... & Mkumbuzi, N. S. (2023). Sports physiotherapists' contribution to the sports and exercise medicine team: moving forward, together. British Journal of Sports Medicine, 57(2), 74-75.</p> <p>Dhillon, Himmat, Sidak Dhillon, and Mandeep S. Dhillon. "Current concepts in sports injury rehabilitation." Indian journal of orthopaedics 51.5 (2017): 529-536.</p> <p>kuthota, V., & Nadler, S. F. (2004). Core strengthening. Archives of physical medicine and rehabilitation, 85, 86-92.</p> <p>Bergmark, A. (1989). Stability of the lumbar spine: a study in mechanical engineering. Acta Orthopaedica Scandinavica, 60(sup230), 1-54.</p> <p>Liemohn, W. P., Baumgartner, T. A., & Gagnon, L. H. (2005). Measuring core stability. Journal of Strength and Conditioning Research, 19(3), 583.</p>

	<p>Papadopoulos E, Nikolopoulos C, & Athanasopoulos S., (2008) The effect of different skin-ankle brace application pressures with and without shoes on single-limb balance, electromyographic activation onset and peroneal reaction time of lower limb muscles, 'The Foot', volume 18(4): 228-236.</p> <p>Willson, J. D., Dougherty, C. P., Ireland, M. L., & Davis, I. M. (2005). Core stability and its relationship to lower extremity function and injury. JAAOS- Journal of the American Academy of Orthopaedic Surgeons, 13(5), 316-325.</p> <p>Kibler, W. B., Press, J., & Sciascia, A. (2006). The role of core stability in athletic function. Sports medicine, 36(3), 189-198.</p> <p>Lederman, E. (2010). The myth of core stability. Journal of bodywork and movement therapies, 14(1), 84-98.</p> <p>Mendiguchia, J., Martinez-Ruiz, E., Edouard, P., Morin, J. B., Martinez-Martinez, F., Idoate, F., & Mendez-Villanueva, A. (2017). A multifactorial, criteria-based progressive algorithm for hamstring injury treatment. Med Sci Sports Exerc, 49(7), 1482-1492.</p> <p>Mendiguchia, J., Samozino, P., Martinez-Ruiz, E., Brughelli, M., Schmikli, S., Morin, J. B., & Mendez-Villanueva, A. (2014). Progression of mechanical properties during on-field sprint running after returning to sports from a hamstring muscle injury in soccer players. International journal of sports medicine, 35(08), 690-695.</p> <p>Myer, C. A., Hegedus, E. J., Tarara, D. T., & Myer, D. M. (2013). A user's guide to performance of the best shoulder physical examination tests. British Journal of Sports Medicine, 47(14), 903-907.</p> <p>Paraskevopoulos, E., Plakoutsis, G., Chronopoulos, E., & Maria, P. (2022). Effectiveness of Combined Program of Manual Therapy and Exercise Vs Exercise Only in Patients With Rotator Cuff-related Shoulder Pain: A Systematic Review and Meta-analysis. Sports Health, 19417381221136104.</p> <p>Behm, D. G., Drinkwater, E. J., Willardson, J. M., & Cowley, P. M. (2010). The use of instability to train the core musculature. Applied physiology, nutrition, and metabolism, 35(1), 91-108.</p> <p>Nichols DS, Glenn TM, Hutchinson KJ. (1995) Changes in the mean center of balance during balance testing in young adults. Physical Therapy.;75:699-706.</p>
Assessment	<p><u>Continuous Assessment (50%):</u></p> <p>The assessment may include any combination of the following:</p> <ul style="list-style-type: none"> • Written and/or oral, 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.

	<ul style="list-style-type: none"> • Assignments and projects 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. • Use of case studies or problem-solving exercises 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. • Online quizzes or interactive assessments: 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. • Classroom discussions and debates: 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. • Peer and self-assessment: 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. <p>Laboratory 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>Final Exam (50%): 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>
Language	Greek / English