COURSE OUTLINE: CLINICAL PHYSIOTHERAPY OF MUSCULOSKELETAL SYSTEM II

1. GENERAL

SCHOOL	SCHOOL OF HEALTH SCIENSES			
ACADEMIC INIT	PHYSIOTHERAPY			
LEVEL OF STUDIES	UNDERGRADUATE			
COURSE CODE	**PHF1**	**SEMESTER**	**6th**	
COURSE TITLE	**CLINICAL PHYSIOTHERAPY OF MUSCULOSKELETAL SYSTEM II**			
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**CREDITS**	
LECTURES		2	3	
CLINICAL PRACTICE		6	4	
			7	
COURSE TYPE	CSM *Compulsory Modules of General Knowledge Background (CMGKB), Compulsory Modules of Specific Knowledge Background (CMSKB), Compulsory Specialisation Modules (CSM), Optional Modules (OM)*			
PREREQUISITE COURSES:	PHYSIOTHERAPY OF THE MUSCULOSKELETAL SYSTEM II			
LANGUAGE OF INSTRUCTION & EXAMINATIONS:	GREEK (theoretical part) GREEK or ENGLISH (clinical practice)			
IS THE COURSE OFFED TO ERASMUS STUDENTS?	YES (clinical practice)			
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/PHYSIO_U_217/			

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Learning Outcomes of the Theoretical Part:

The student, upon completion of the course, will be able to:

1. Understands in depth and manages the healing process of connective, muscular, and peripheral nervous tissue through Physiotherapeutic Rehabilitation.
2. Identifies the type of tissue involved in the injury (muscle, tendon, ligament, etc.), the nature of the injury, and its severity.
3. Assesses and documents motor, postural, sensorimotor, neurodynamic, and functional impairments in patients with various musculoskeletal injuries.
4. Designs, selects appropriate means, methods, and physiotherapy techniques, applies, supervises, and advances a rehabilitation program based on holistic scientific evidence while addressing the individualized needs and specificities of each patient.
5. Sets realistic therapeutic goals according to the injury stage (acute, subacute, chronic, functional).
6. Makes and implements decisions based on sound clinical reasoning throughout the

therapeutic intervention process.

Learning Outcomes of the Clinical Part:
The student, upon completion of the course, will be able to:

1. Takes a comprehensive patient history, recording findings and utilizing all available information (subjective, objective, and laboratory) regarding the type of injury, the affected tissue, and the severity of the injury.
2. Deeply understands and effectively manages the information derived from clinical and laboratory findings to assess, organize, and structure the therapeutic program, setting achievable treatment goals based on the type of injury, the involved tissue, the severity, the stage of rehabilitation, and the patient's individualized needs and specificities.
3. Is capable of selecting the appropriate therapeutic methods and techniques that align with the purpose and objectives of the treatment plan, while also being able to apply them effectively and safely.
4. Evaluates, supervises, adapts, and modifies the treatment program daily based on the rehabilitation stage of the specific patient.
5. Successfully manages patient psychological aspects while understanding the role of the physiotherapist within the rehabilitation team (physician, nurse, occupational therapist, psychologist, etc.) and the importance of effective collaboration with fellow physiotherapists and other healthcare professionals across all levels of care.
6. Effectively addresses communication and collaboration challenges, both with the patient and their family environment.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Teamwork
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
Others …

- Research, analysis, and synthesis of data and information, utilizing the necessary technologies.
- Adaptation to new situations.
- Decision-making.
- Critical thinking and self-assessment.
- Independent work.
- Teamwork.
- Work in an interdisciplinary environment.
- Clinical case planning and management.
- Demonstration of social, professional, and ethical responsibility, with sensitivity to gender-related issues.
- Respect for diversity and multiculturalism.
- Promotion of free and inductive thinking.

3. SYLLABUS

A. THEORETICAL PART

Unit 1

- Introduction to the rehabilitation process of musculoskeletal (MSK) injuries – A Guide to Physiotherapy Practice: The disability model. Summary of the Physiotherapy Practice Guide (Part 1 & 2).
- Clinical reasoning in physiotherapy rehabilitation of MSK injuries: The disability model, the patient-client management model. Documentation system. Interaction and connection between theory and practice. The process of clinical reasoning and decision-making in musculoskeletal disorder rehabilitation. Decision-making models, reasoning, and problem-solving strategies.

Unit 2

- In-depth understanding and consolidation of knowledge in musculoskeletal system assessment under clinical conditions: SODA - Subjective evaluation (S), Objective (clinical) evaluation (O), means & assessment techniques: Active movements & modifications, passive physiological movements (end-feel), passive movements, capsular pattern, muscle strength, range of motion-flexibility-muscle tension-shortening, accessory movements (Special Mobilization Techniques - SMT), special tests & integrity tests, balance-coordination tests, proprioception tests, motor pattern tests. Data synthesis (D), therapeutic plan organization (P), implementation, supervision, and adaptation in all rehabilitation phases (acute-subacute-chronic phase).
- The role & management of pain in physiotherapy rehabilitation of MSK injuries: Definition, types & pain assessment (acute-chronic-neuropathic, etc.). Role, management & mechanisms of pain control during the rehabilitation process of various MSK injuries-disorders.

Unit 3

- Shoulder injuries and disorders: Consolidation of knowledge through analysis of complex clinical cases of shoulder injuries-disorders. Clinical classification of shoulder injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of shoulder joint injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Mobility impairments in MSK injuries: Evaluation & rehabilitation of range of motion and flexibility in MSK injuries.
- Endurance impairments in MSK injuries: Assessment & rehabilitation of aerobic capacity & endurance in MSK injuries.

Unit 4

- Elbow injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of elbow injuries-disorders. Clinical classification of elbow injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of elbow injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Neuromuscular control disorders in MSK injuries: Reactive Neuromuscular Exercise. Assessment & rehabilitation of proprioception and motor control in MSK injuries.
- Muscle performance disorders in MSK injuries: Assessment & rehabilitation of muscle performance (strength, endurance) in MSK injuries.

Unit 5

- Hand & wrist injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of hand & wrist injuries-disorders. Clinical classification of hand-wrist injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of hand & wrist injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the

course.

- Balance & postural stability disorders in MSK injuries: The role of balance in the physiotherapy rehabilitation of MSK injuries. MSK injury & balance, assessment & physiotherapy rehabilitation of balance in MSK injuries. Clinical & laboratory assessment (scales & clinical balance assessment tests, balance platforms, etc.) and balance rehabilitation in MSK injuries.

Unit 6

- Cervical spine injuries & temporomandibular joint (TMJ) disorders: Consolidation of knowledge through analysis of complex clinical cases of cervical spine & TMJ injuries-disorders. Clinical classification of cervical spine injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of cervical spine injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Fall risk assessment tools for elderly individuals (3rd & 4th age) and certified therapeutic exercise programs for fall prevention: Assessment tools for static & dynamic balance, multi-factorial assessment tools, and functional mobility evaluation (Sharpened Romberg test, Functional Reach test, Turn 180°, FES-I, ABC, TUG test & Berg Balance Scale, etc.). Certified therapeutic exercise programs for fall prevention (ProFouND, Otago, FaMe, PS, etc.).

Unit 7

- Thoracic spine & chest injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of thoracic spine and chest injuries-disorders & their clinical classification.
- Lumbar spine injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of lumbar spine injuries-disorders. Clinical classification of lumbar spine injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of lumbar spine injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.

Unit 8

- Pelvic region injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of pelvic injuries-disorders. Clinical classification of pelvic injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of pelvic injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Isokinetics in physiotherapy for MSK injuries: The role of isokinetics in physiotherapy rehabilitation of MSK injuries. Clinical significance of isokinetics in upper & lower limb MSK injuries.

Unit 9

- Hip injuries & thigh muscle injuries: Consolidation of knowledge through analysis of complex clinical cases of hip injuries & thigh muscle injuries. Clinical classification of hip injuries-disorders & evaluative-therapeutic clinical reasoning algorithms.
- Complex clinical cases of hip injuries & thigh muscle injuries: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Open & closed kinetic chain exercises (OKC & CKC) in physiotherapy for MSK injuries: Advantages & disadvantages of their use in the physiotherapy rehabilitation process of MSK injuries. The role of closed kinetic chain exercises in restoring neuromuscular control.

- Plyometric exercises in physiotherapy for MSK injuries: The role of plyometric exercises in physiotherapy rehabilitation of MSK injuries. Integration of plyometric exercises in the physiotherapy rehabilitation program for MSK injuries - clinical significance.

Unit 10

- Knee injuries & disorders: Consolidation of knowledge through analysis of complex clinical cases of knee injuries-disorders. Clinical classification of knee injuries-disorders & evaluative-therapeutic clinical reasoning algorithms (European Rehabilitation Panel, International Patellofemoral Research Retreat, etc.).
- Complex clinical cases of knee injuries-disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach philosophy in relevant clinical cases (real clinical case studies) that students worked on in the clinical-laboratory part of the course.
- Electromyography (EMG) & EMG biofeedback in physiotherapy for MSK injuries: The role & clinical significance of EMG and EMG biofeedback in MSK rehabilitation.
- Physiotherapy for extensor mechanism & patellofemoral joint disorders: Analysis of complex patellofemoral pain syndrome cases. The use of isokinetics, EMG & EMG biofeedback in evaluating & rehabilitating patellofemoral pain cases.

Unit 11

- Injuries of the Ankle Joint & Injuries of the Gastrocnemius Muscles & Tendons: Consolidation of knowledge through the analysis of complex clinical cases of injuries and disorders of the gastrocnemius muscles & tendons. Clinical classification of injuries/disorders of the pelvis & clinical reasoning-based evaluative and therapeutic algorithms.
- Complex Clinical Cases of Injuries/Disorders of the Gastrocnemius Muscles & Tendons: Presentation, analysis & clinical reasoning, feedback, following the philosophy of the problem-solving approach on relevant clinical cases (real-life clinical case studies) that students encountered during the clinical-laboratory part of the course.
- Open & Closed Kinetic Chain Exercises (OKC & CKC) in Physiotherapeutic Rehabilitation of Musculoskeletal (MSK) Injuries: Advantages & disadvantages of their use in the MSK rehabilitation process. The role of closed kinetic chain exercises in regaining neuromuscular control.

Unit 12

- Injuries & Disorders of the Foot: Consolidation of knowledge through the analysis of complex clinical cases of injuries/disorders of the foot. Clinical classification of injuries/disorders of the foot & evaluative-therapeutic clinical reasoning algorithms.
- Complex Clinical Cases of Foot Injuries/Disorders: Presentation, analysis & clinical reasoning, feedback, following the problem-solving approach on relevant clinical cases (real-life clinical case studies) that students worked on during the clinical-laboratory part of the course.
- Running Biomechanics & MSK Rehabilitation: Running-related injuries, assessment of running biomechanics, biomechanical factors related to injury risk, strategies for modifying running mechanics, and their application in physiotherapy rehabilitation.

Unit 13

- Multidimensional Aspects of Rehabilitation in MSK Disorders: Consideration of biomechanical, neurophysiological, and psychosocial factors affecting the rehabilitation process in MSK disorders.
- Implementation of Evidence-Based Clinical Practice Guidelines in MSK Rehabilitation: Application of clinical practice guidelines based on current scientific evidence for optimal MSK rehabilitation.
- Comprehensive Rehabilitation & Return to Functional Activities: Design & implementation of a holistic rehabilitation program aimed at the full functional recovery of the patient and their return to daily and athletic activities.

Unit 14: Final Student Assessment - Examination

- The overall performance of students is evaluated according to the course assessment methods

outlined below.

B. CLINICAL PART

Unit 1: Introduction to the Clinical Environment of Hospitals, Nursing Homes, Senior Centers, Rehabilitation Centers, etc.

- Initial introduction and establishment of communication and collaboration rules with the rehabilitation team, healthcare professionals, and patients. Allocation of medical cases and student roles within the team.
- Clinical cases of musculoskeletal (MSK) patients.
- Student examples and applications.
- Student assessment and feedback within the group framework.

Unit 2: Physiotherapy for Shoulder Injuries and Disorders

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- At the end of the clinical session, a summary discussion takes place between the instructor and students, focusing on evaluation, self-assessment, and performance feedback from both the instructor and students.
- The session concludes with a preliminary plan outlining the goals and objectives for the next lesson and therapeutic session, ensuring continuous, individualized adaptation and progression of the treatment plan.

Unit 3: Physiotherapy for Elbow Injuries and Disorders

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 4: Injuries and Disorders of the Hand & Wrist

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 5: Injuries and Disorders of the Cervical Spine, Craniofacial Area & Temporomandibular Joint (TMJ)

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 6: Injuries and Disorders of the Thoracic Spine and Chest

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous

individualized adaptation and progression of the treatment plan.

Unit 7: Injuries and Disorders of the Lumbar Spine

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 8: Injuries and Disorders of the Lumbar Spine *(Continuation of Unit 7)*

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 9: Hip Injuries & Thigh Muscle Injuries

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 10: Knee Injuries and Disorders

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 11: Ankle Joint Injuries & Gastrocnemius Muscle & Tendon Injuries

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 12: Foot Injuries and Disorders

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students, emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 13: Postural Disorders, Muscle Imbalances, Peripheral Nerve Injuries & Entrapment Syndromes

- Clinical cases – practice of clinical assessment and treatment skills, analysis, and clinical reasoning based on the problem-solving approach taught in the course.
- Summary discussion at the end of the clinical session between the instructor and students,

emphasizing evaluation, self-assessment, and feedback on student and team performance.
- Preliminary planning of the next lesson and therapeutic session, focusing on continuous individualized adaptation and progression of the treatment plan.

Unit 14: Final Student Assessment - Examination
- The overall performance of students is evaluated according to the course assessment criteria.

4. TEACHING and LEARNING METHODS – EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	**Face-to-Face Instruction** The teaching methods for the **theoretical part** of the course include a variety of instructional approaches and tools, such as: • Lectures and presentations using a whiteboard, overhead projector, fixed projection system, video, and television. • Classroom discussions and feedback. The **clinical part** of the course is taught using the following methods and tools: • Demonstration and application of methods and techniques used in the rehabilitation of patients with within the hospital. • Demonstration and application of the laboratory equipment in the hospital's physiotherapy department. • Clinical training of students in small groups. • Presentation of clinical cases by students. • Analysis and presentation of clinical cases. • Clinical application.
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	**Use of ICT in Teaching, Laboratory Training, and Student Communication** Theoretical Part: • Utilization of Information and Communication Technologies (ICT), including the Internet, multimedia, electronic discussions via an asynchronous learning platform, and email. Social media closed group: https://www.facebook.com/groups/138676591809037 Closed Electronic Patient and Clinical Case File for All Clinical Institutions (Hospital, Daycare Centers for the Elderly, Nursing Homes): https://docs.google.com/document/u/0/?pli=1 Clinical Part: • Utilization of Information and Communication Technologies (ICT), including the Internet, multimedia, electronic discussions via an asynchronous learning platform, and email. Social media closed group: https://www.facebook.com/groups/138676591809037 Closed Electronic Patient and Clinical Case File for All Clinical Institutions (Hospital, Daycare Centers for the Elderly, Nursing Homes): https://docs.google.com/document/u/0/?pli=1

TEACHING METHODS

The manner and methods of teaching are described in detail.
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS.

Activity	Semester workload
Lectures	30
Clinical Practice	90
Independent Study	55
Couse Total	**175**

STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically defined evaluation criteria are given, and if and where they are accessible to students.

Student Performance Assessment

The assessment criteria for student performance are available on the course website and are specified as follows:

Theoretical Part:
A final written assessment (or an oral examination in the presence of two instructors) is conducted in combination with a mid-term evaluation (progress test). The final course evaluation takes place after the end of the academic semester and covers the entire taught material. The student is required to answer questions (essay or multiple choice) that evenly cover the course's teaching units, as well as questions that require critical thinking. The final theory grade ranges from 0 to 10 and is determined by the final exam (60%) and the mid-term evaluation (40%), with a predetermined weighting factor set at the beginning of the semester.

Clinical Part:
Oral examinations by the instructors regarding the assignment, presentation, and application of the physiotherapeutic intervention, as well as daily assessment in the clinical setting through laboratory exercises and the recording of patient evaluation sheets by the students.

In each lesson, the instructors evaluate the student's participation and their ability to adequately respond to the management of the clinical case presented. The effectiveness of the intervention used is assessed under the guidance of the instructor. Specifically, the examination is based on the student's ability to approach the patient, take a medical history, conduct the evaluation in the correct order, set short-term and long-term therapeutic goals, and apply the appropriate physiotherapeutic techniques.

The student must have successfully completed a set of specific physiotherapeutic interventions covering all cardiovascular and respiratory physiotherapy techniques in each clinical setting in which they are engaged.

The final examinations are oral, where the student is required to solve practical problems and perform the necessary procedures (e.g., apply bronchial clearance techniques to a patient with a respiratory condition and improve pulmonary

	ventilation, etc.). The final clinical grade is 0-10, determined by the student's daily clinical performance, with equal weighting given to the grades obtained in each individual clinical placement. The overall student performance is evaluated by combining theoretical and clinical components of the course, using weighted coefficients that sum to 1, based on the credit units of each section. Successful completion of both theoretical and clinical components is mandatory for passing the course. The final grade is recorded on a 10-point scale (0-10), with a minimum passing grade of 5.

5. ATTACHED BIBLIOGRAPHY

GREEK

1) Brotzman B., Manske R. Ορθοπαιδική αποκατάσταση στην κλινική πράξη, Εκδόσεις Κωνσταντάρα, Αθήνα 2015.

2) Hoogenbaum B., Voight M., Prentice W. Φυσικοθεραπευτρικές παρεμβάσεις στο μυοσκελετικό σύστημα. Εκδόσεις Κωνσταντάρα Αθήνα 2016.

3) Γαλανόπουλος, Ν.Γ., Βερέττας, Δ. Α. Ι., Επώδυνες καταστάσεις μαλακών ιστών μυοσκελετικού συστήματος, Επιστημονικές εκδόσεις Μ. Γ. Παρισιάνου, 2000.

4) Κοτζαηλίας, Δ.Α, Φυσικοθεραπεία σε κακώσεις του μυοσκελετικού συστήματος, University Studio Press, 2008.

5) Kisner C, Colby LA: Θεραπευτικές Ασκήσεις. Βασικές Αρχές και Τεχνικές. Εκδόσεις Σιώκη, 2003.

6) Hoppenfeld S: Ορθοπεδική Νευρολογία. Αθήνα, Επιστημονικές εκδόσεις Μ. Γ. Παρισιάνου, 2000.

7) Prentice, W.E, Τεχνικές αποκατάστασης αθλητικών κακώσεων, Επιστημονικές εκδόσεις Μ. Γ. Παρισιάνου, 2007.

8) Σημειώσεις & υλικό του διδάσκοντα του μαθήματος μέσω του e-class του Τμήματος Φυσικοθεραπείας του Πανεπιστημίου Θεσσαλίας.

ENGLISH

1) Basmajian, J.V., De Luca, C, Muscles alive - Their function revealed by electromyography, 5th ed, Williams & Wilkins, Baltimore, 1985.

2) Brotzman, S.B., Wilk, K.E. Clinical Orthopaedic Rehabilitation, Mosby, 2003.

3) Bullock-Saxton, J., Janda, V., Reflex Activation of gluteal muscles in walking with balance shoes: An approach to restoration of function for low back pain patients, Spine, 1993, 18 (6):704-708.

4) Buttler, D.S, Mobilisation of the nervous system, Churchill Livingstone, Melbourne, 1991.

5) Chaitow, L, Muscle energy techniques, Churchill Livingstone, New York, 1997.

6) Donatelli, R, Wooden, M.J., Orthopaedic physical therapy, 2nd ed, Churchill Livingstone, New York, 1994.

7) Grelsamer, R.P., McConnel, J.: The Patella: A Team Approach, Aspen, Maryland, 1998.

8) Hall, C.M., Thein-Brody, L, Therapeutic exercise – moving toward function, 2nd ed, Lippincott, Williams & Wilkins, Philadelphia, 2005.

9) Hertling D., Kessler R.M.: Management of common musculoskeletal disorders – Physical therapy principles & methods, 4th Ed. Lippincott, Williams & Wilkins, Philadelphia, 2006.

10) Janda, V. Muscle Imbalance – The role of the muscle as pathogenetic factors in Pain Syndromes, Course notes, Basingstoke, UK, 2000.

11) Janda, V., Frank, C., Liebenson, C.:Evaluation of Muscle Imbalances. In Rehabilitation of the Spine. 2nd Ed., Liebenson, C. (Ed), Lippincott, Williams & Wilkins, Philadephia, 2007.

12) Janda, V., Vavrova, A., Herbenova, A., Veverkova, M.: Sensorimotor stimulation. In Rehabilitation of the Spine. 2nd Ed., Liebenson, C. (Ed), Lippincott, Williams & Wilkins, Philadelphia, 2007.

13) Janda, V., Vavrova, A, Muscle length assessment, Posture & muscle form assessment, Sensory motor stimulation (video), Body Control Systems, Brisbane, 1994.

14) Shacklock, M.: Clinical Neurodynamics: A new system of musculoskeletal treatment, Elsevier Butterworth Heinemann, Edinburgh, 2005.

15) Kesson, M., Atkins, E. Orthopaedic Medicine: A Practical Approach, 2nd Ed. Butterworth –Heinemann, Edinburgh, 2005.

16) Lephart, S., Fu, F.: Proprioception and Neuromuscular Control in Joint Stability, Human Kinetics, Champaign, 2000.

17) Lewit, K.: Manipulative Therapy in the Rehabitation of the Locomotor System, 3rd Ed., Butterworth-Heinemann, Oxford, 1999.

18) Magee, D.: Orthopaedic Physical Assessment. 5th Ed, W.B Saunders, 2005.

19) Maitland's Vertebral Manipulation (GD Maitland, E Hengeveld, K Banks, and K English, eds), 7th edn, Elsevier Butterworth Heinemann, Edinburgh, 2005.

20) Maitland's Peripheral Manipulation (E Hengeveld, K Barks, eds), 4th edn, Elsevier Butterworth Heinemann, Edinburgh, 2005.

21) Meadows J.T.S., Orthopedic differential diagnosis – a case study approach, McGraw-Hill, New York, 1999.

22) Merletti R., Parker, P.A, Electromyogrphy – Physiology, engineering and noninvasive applications, IEEE Press, Wiley-Interscience, 2004.

23) Oatis, C.A, Kinesiology – the mechanics & pathomechanics of the human movement, Lippincott, Williams & Wilkins, Philadelphia, 2004.

24) Page P., Frank C. C., Lardner, R., Assessment and treatment of muscle imbalance – The Janda approach, Human Kinetics, 2010.

25) Petty N.J.: Neuromusculoskeletal Examination and Assessment: A handbook for therapists, 3rd ed, Elsevier Churchill Livingstone, Edinburgh, 2006.

26) Prentice, W.E., Voight, M.I.: Techniques in Musculoskeletal rehabilitation, McGraw-Hill, New York, 2001.

27) Richardson, C.A., Jull, G.A., Hodges, P.A. , Hides, J.A. Therapeutic Exercise for Spinal Segmental Stabilisation in the Low Back: Scientific basis & Clinical Approach, Churchill-Livingstone, Edinburgh, 1999

28) Sanchis-Alfonso V. (Ed): Anterior Knee Pain and Patellar Instability. Springer-Verlag, London, 2006.

29) Sahrmann, S.A.: Diagnosis and treatment of Movement Impairment Syndromes, Mosby, St. Louis, 2001.

Scientific Journals:

1. Journal of Orthopaedic & Sports Physical Therapy https://www.jospt.org/
2. BMC Musculoskeletal Disorders https://bmcmusculoskeletdisord.biomedcentral.com/
3. Journal of Electromyography and Kinesiology https://www.sciencedirect.com/journal/journal-of-electromyography-and-kinesiology
4. Australian Journal of Physiotherapy https://www.sciencedirect.com/journal/australian-journal-of-physiotherapy
5. Clinical Biomechanics https://www.sciencedirect.com/journal/clinical-biomechanics
6. Gait & Posture https://www.sciencedirect.com/journal/gait-and-posture