

New Master's Programme (MSc)
“Evidence-Based Physiotherapy Management
of the Musculoskeletal Patient”

Department of Physiotherapy
School of Health Sciences

A9. Course Outlines

August 2025

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Semester 1 — Compulsory Modules

Research Methodology and Biostatistics in Physiotherapy

COURSE OUTLINE

SCHOOL	SCHOOL OF HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM101	SEMESTER	1st
COURSE TITLE	Research Methodology and Biostatistics in Physiotherapy		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Science Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Available on the program's e-class platform		

LEARNING OUTCOMES

Learning Outcomes
The course aims to equip postgraduate students with essential theoretical knowledge and practical skills in research methodology and biostatistics, focusing on their applications in the scientific field of Physiotherapy. It seeks to enhance students' ability to design, implement, and evaluate scientific studies, analyze data using statistical tools, and support evidence-based decision-making in clinical practice and research. Special emphasis is placed on research ethics and integrity, and on developing critical appraisal skills for assessing the quality of scientific literature. Upon successful completion of the course, students will be able to: • Understand the basic principles of scientific methodology and biostatistics, with emphasis on applications in physiotherapy. • Apply appropriate methods of data collection and statistical analysis to address research questions in physiotherapy. • Critically evaluate and interpret research articles and statistical results. • Design and implement research protocols using suitable statistical techniques. • Use statistical software packages (e.g., SPSS, R) for data processing and presentation. • Understand and apply ethical principles and research integrity in health sciences. • Collaborate on group projects and presentations of research topics. • Utilize research data to support evidence-based physiotherapy practice.
General Skills
– Searching, analyzing, and synthesizing data – Decision making – Independent and group work – Working in an interdisciplinary environment – Critical thinking and self-reflection – Promoting creative thinking

COURSE CONTENT

The course includes theoretical and practical instruction in the following thematic units:

- Introduction to scientific research
 - o Definitions, purpose, and types of research (basic, applied, clinical)
 - o Quantitative and qualitative methodology: differences and complementarity
- Research ethics and scientific integrity
 - o Ethical principles, informed consent, data protection
 - o Ethics committees – conflict of interest management
- Formulating research questions and hypotheses
 - o PICO model – theoretical background
 - o Topic selection and refinement, literature review
- Study methodology and design
 - o Observational, experimental, cross-sectional, longitudinal, randomized studies
 - o Internal/external validity – sources of bias
- Sampling and sample size calculation
 - o Sampling methods (probability/non-probability)
 - o Study power and type I and II errors
- Measurement tools – Reliability and Validity
 - o Evaluation of questionnaires, protocols, and measurement instruments
 - o Repeatability – systematic and random errors
- Data collection, classification, and management
 - o Types of variables and data
 - o Coding, processing, and data cleaning
- Descriptive statistics
 - o Measures of central tendency and dispersion
 - o Tables and graphs – interpretation and understanding
- Inferential statistics – Hypothesis testing
 - o Normality, t-test, ANOVA, non-parametric tests
 - o Chi-square test, Fisher's exact test
- Correlations and regression analysis
 - o Pearson/Spearman correlation coefficients
 - o Linear and logistic regression – basic principles
- Sensitivity/specificity analysis and ROC curves
 - o Positive/negative predictive values, AUC
 - o Survival analysis (Kaplan-Meier – Cox regression)
- Use of statistical analysis software
 - o SPSS/R: data entry, basic analyses
 - o Interpretation of results – exporting tables and graphs
- Critical appraisal of scientific articles – final review
 - o Study evaluation (CONSORT, STROBE, PRISMA)
 - o Overall content review, final assignment preparation

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: Face-to-face and distance learning (synchronous/asynchronous) in selected modules.	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Independent Study / Comprehension Exercises	30

	Literature Review and Analysis	35
	Preparation of Midterm Assignment	35
	Preparation for Final Examination	25
	Reading and Processing of Statistical Data	15
	Use of Statistical Software	6
	Review and Consolidation of Course Material	2.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5
ASSESSMENT METHODS	- Individual written assignment (e.g., research protocol or article analysis) – 40% - Final written examination with open-ended questions, statistical applications, and critical analysis – 60% The language of assessment is Greek. Assessment criteria and sample questions are published on the course's e-class platform.	

SUGGESTED BIBLIOGRAPHY

- Portney, L. G., & Watkins, M. P. (2015). Foundations of Clinical Research: Applications to Practice (3rd ed.). F.A. Davis.
- Bandyopadhyay, S. (2021). Research Methodology in Health and Biomedical Sciences. Springer.
- Field, A. (2017). Discovering Statistics Using IBM SPSS Statistics (5th ed.). SAGE.
- Hulley, S. B., Cummings, S. R., Browner, W. S., Grady, D. G., & Newman, T. B. (2013). Designing Clinical Research (4th ed.). Lippincott Williams & Wilkins.
- Greenhalgh, T. (2019). How to Read a Paper: The Basics of Evidence-based Medicine and Healthcare (6th ed.). Wiley-Blackwell.
- Motulsky, H. (2014). Intuitive Biostatistics (3rd ed.). Oxford University Press.

Integrative Assessment and Management of Musculoskeletal patients I

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM102	SEMESTER	1st
COURSE TITLE	INTEGRATIVE ASSESSMENT AND MANAGEMENT OF MUSCULOSKELETAL PATIENTS I		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Scientific Area, Skill Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Available on the postgraduate e-class platform		

LEARNING OUTCOMES

Learning Outcomes
The aim of this course is to cultivate clinical reasoning and comprehensive assessment skills for the effective management of musculoskeletal patients. Students will deepen their understanding of anatomy and diagnostic imaging with emphasis on regional structures and their application in clinical diagnosis. In parallel, they will develop the ability to identify "Red Flags" (signs of serious pathology), understanding their importance for timely and safe intervention. The course includes practical application through case-based simulations, combining fundamental principles of pain assessment and management. Upon successful completion of the course, students will be able to: 1. Understand core principles of clinical reasoning and their importance in pain management. 2. Identify key anatomical structures and apply basic principles of diagnostic imaging. 3. Detect warning signs (Red Flags) of serious pathology. 4. Distinguish between different pain mechanisms and their pathophysiological bases. 5. Apply pain assessment tools and collect accurate patient history. 6. Design basic therapeutic interventions based on the biopsychosocial model. 7. Collaborate in teams and analyze case studies. 8. Recognize the importance of multidisciplinary collaboration. 9. Respond ethically and professionally to pain management challenges.
General Skills
– Searching, analyzing and synthesizing data and information using appropriate technology – Decision-making – Autonomous and team work – Critical thinking and self-assessment – Working in interdisciplinary environments

COURSE CONTENT

The course includes theoretical and practical instruction in the following thematic areas:

- Clinical reasoning in musculoskeletal physiotherapy – frameworks and models
- Regional anatomy and functional assessment
- Diagnostic imaging in musculoskeletal disorders (X-ray, MRI, US): indications and interpretation
- Identification of "Red Flags" – indications for referral
- Mechanisms and types of pain: nociceptive / neuropathic / nociplastic and acute / chronic – pathophysiology and clinical significance.
- Pain assessment: history-taking methods, scales, and measurement tools
- Biopsychosocial approach to pain: integration into clinical practice
- Principles of evidence-based practice in pain management
- Therapeutic intervention strategies based on the ICF model
- Ethics and professional conduct in clinical pain management
- Interprofessional collaboration and care coordination
- Case studies – application of reasoning and evidence
- Knowledge integration and feedback through simulation

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: Face-to-face and distance learning (synchronous / asynchronous) in selected modules	
USE OF ICT	Use of ICT in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Independent study / comprehension exercises	30
	Literature study and analysis	35
	Preparation of mid-term assignment	35
	Preparation for final examination	25
	Reading and solving clinical case studies	15
	Participation in simulations and feedback	6
	Review and content revision	2.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5
ASSESSMENT METHODS	• Mid-term written assignment (40%): Case analysis or thematic literature review applying theoretical assessment tools based on clinical reasoning. • Final written examination (60%): Includes essay questions, clinical scenarios, and application of clinical reasoning principles. Assessment criteria are available on the course's e-class platform. The language of assessment is Greek.	

SUGGESTED BIBLIOGRAPHY

- Petty, N. J., & Moore, A. P. (2018). *Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists* (5th ed.). Elsevier.
- Jones, M. A., & Rivett, D. A. (2019). *Clinical Reasoning in Musculoskeletal Practice* (2nd ed.). Elsevier.
- Falla, D. L., Jull, G. A., Hodges, P. W., Vicenzino, B. T., & Grieve, G. P. (2024). *Grieve's Modern Musculoskeletal Physiotherapy* (5th ed.). Elsevier.
- Kaplan, C. M., Shah, R. P., & Clauw, D. J. (2024). Deciphering nociplastic pain: Clinical features, risk factors, and potential mechanisms. *Nature Reviews Neurology*, 20(3), 153–165.
- Treede, R.-D., Rief, W., Barke, A., Aziz, Q., Bennett, M. I., Benoliel, R., ... Wang, S.-J. (2025). Application of the grading system for nociplastic pain in chronic pain conditions. *Pain*, 166(1), 12–19.
- Kjaer, P., Kongsted, A., & Hartvigsen, J. (2024). Standardized definition of red flags in musculoskeletal care: A narrative review. *Medicina*, 60(6), 1002.
- de Vet, H. C. W., Reitsma, J. B., & Verhagen, A. P. (2021). International framework for red flags for potential serious spinal pathologies. *Journal of Orthopaedic & Sports Physical Therapy (JOSPT)*, 51(9), 403–407.
- Hegedus, E. J., & Cook, C. E. (2016). *Orthopedic Physical Examination Tests: An Evidence-Based Approach* (2nd ed.). Elsevier.

Neuromusculoskeletal Management of the Lumbopelvic Region and Lower Limb (Basic)

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM103	SEMESTER	1st
COURSE TITLE	NEUROMUSCULOSKELETAL MANAGEMENT OF THE LUMBOPELVIC REGION AND LOWER LIMB (BASIC)		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures & Practical Training		3	7.5
COURSE TYPE	Science Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
The aim of this course is to introduce postgraduate students to the fundamental principles of neuromusculoskeletal management, with an emphasis on the lumbopelvic region and lower limbs. Students will deepen their knowledge of anatomy, biomechanics, pathophysiology, and clinical manifestations of conditions affecting these regions. The course focuses on the application of modern assessment methods, including patient history taking, physical examination, and movement analysis, as well as the development of individualized rehabilitation plans. Skills in manual therapy, stabilization techniques, therapeutic exercise, and functional rehabilitation will be cultivated, with particular emphasis on scientific evidence and interdisciplinary collaboration. Additionally, students will become familiar with principles of prevention and reintegration into daily activities, ensuring a holistic approach to care. Learning Outcomes Upon successful completion of the course, students will be able to: 1. Understand the anatomical, biomechanical, and pathophysiological principles related to the lumbopelvic region and lower limbs. 2. Identify common musculoskeletal disorders affecting the lumbopelvic region and lower limbs, and assess their impact on patient function and quality of life. 3. Perform systematic and comprehensive clinical assessments using appropriate tests, evaluation tools, and physiotherapy methods. 4. Design and implement individualized treatment plans based on assessment findings and patient-specific needs. 5. Develop clinical reasoning skills and make evidence-informed decisions in the management of regional musculoskeletal conditions. 6. Apply contemporary therapeutic techniques, including mobilization and manipulation, stabilization, pain management, functional restoration, and strengthening. 7. Recognize the importance of an interdisciplinary approach and collaborate effectively with other healthcare professionals. 8. Integrate the biopsychosocial model into the management of chronic musculoskeletal disorders, considering psychological and social determinants. 9. Employ effective communication and patient education strategies to enhance understanding

and engagement in the rehabilitation process.
10. Recognize the limits of their professional scope and know when to refer patients to other specialties or request further diagnostic evaluation.
11. Apply core principles of evidence-based practice to improve the effectiveness of interventions and ensure high-quality patient care.
General Skills
• Search for, analysis and synthesis of data and information, using the necessary technologies • Decision-making • Independent and group work • Critical thinking and self-assessment • Working in an interdisciplinary environment • Project planning and management • Respect for professional and ethical values • Promotion of free, creative, and inductive thinking

COURSE CONTENT

The course includes both theoretical and practical instruction on the following topics:
• Introduction to the neuromusculoskeletal approach – Fundamental principles of assessment and management • Functional anatomy and kinematics of the lumbopelvic region • Functional anatomy and kinematics of the lower limbs • Pathophysiology and clinical presentation of lumbar spine and pelvic disorders • Pathophysiology and clinical presentation of hip and knee disorders • Pathophysiology and clinical presentation of ankle and foot disorders • Clinical examination – History taking and physical assessment • Movement analysis and functional evaluation – Tools and techniques • Development of clinical reasoning and differential diagnosis • Design of therapeutic interventions – Kinesiotherapy and manual therapy • Core stabilization and lower limb strengthening • Functional rehabilitation programs – Prevention of relapses and return to activity • Case study analysis and integrated clinical application

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: Face-to-face and distance education (synchronous / asynchronous) for selected modules.	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Laboratory and practical exercises / Clinical simulations	40
	Literature review and independent study	45
	Development of individual assignment (theoretical or clinical case study)	30
	Preparation for final written and practical examination	33.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5

ASSESSMENT METHODS	• Midterm assignment (35%): Written work including a critical literature review or case analysis, applying evidence-based clinical reasoning. • Final written and practical examination (65%): The final assessment includes both a theoretical section (essay questions, clinical scenarios) and a practical section involving simulation-based clinical evaluation and treatment in pairs. Language of Assessment: Greek Assessment Criteria Access: The assessment criteria are explicitly defined and available to students on the course's Moodle (e-class) platform.
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SUGGESTED BIBLIOGRAPHY

• Cook, C. E., Hegedus, E. J., & Hooper, T. L. (2022). <i>Orthopedic Manual Therapy: An Evidence-Based Approach</i> (2nd ed.). Pearson. • Magee, D. J. (2021). <i>Orthopedic Physical Assessment</i> (7th ed.). Elsevier. • Nijs, J., et al. (2021). In-depth clinical examination of patients with chronic spinal pain: From pathoanatomy to pain neuroscience. <i>Physical Therapy</i>, 101(3). • Reiman, M. P., Mather, R. C., & Cook, C. E. (2023). Evidence-based hip and groin examination. <i>Journal of Sport Rehabilitation</i>, 32(1), 1–13. • Lee, D. (2019). <i>The Pelvic Girdle: An Integration of Clinical Expertise and Research</i> (5th ed.). Elsevier. • Liebenson, C. (2015). <i>Rehabilitation of the Spine: A Patient-Centered Approach</i> (2nd ed.). Wolters Kluwer Health. • Neumann, D. A. (2017). <i>Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation</i> (3rd ed.). Elsevier. • O'Sullivan, P., & Lin, I. (2021). Integrating cognitive functional therapy into clinical practice. <i>Journal of Orthopaedic & Sports Physical Therapy</i>, 51(9), 425-428. • Sahrmann, S. A. (2011). <i>Diagnosis and Treatment of Movement Impairment Syndromes</i>. Elsevier Health Sciences. • van Tulder, M., Maher, C., & Koes, B. (2018). Evidence-based management of low back pain. <i>Best Practice & Research Clinical Rheumatology</i>, 32(6), 789-798.

Neuromusculoskeletal Management of the Lumbopelvic Region and Lower Limb (Advanced)

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM104	SEMESTER	1st
COURSE TITLE	NEUROMUSCULOSKELETAL MANAGEMENT OF THE LUMBOPELVIC REGION AND LOWER LIMB (ADVANCED)		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures & Practical Training		3	7.5
COURSE TYPE	Science Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
The course focuses on an in-depth understanding and application of advanced techniques for managing neuromusculoskeletal disorders of the lumbopelvic region and lower limb. Students will acquire specialized knowledge and skills, grounded in evidence-based practice and the most current scientific guidelines. The course content includes advanced assessment and therapeutic interventions for complex clinical cases, along with the integration of the biopsychosocial approach into the treatment plan. Emphasis is placed on training for the management of chronic and acute conditions, the use of advanced clinical reasoning techniques, the improvement of functionality, rehabilitation, and the enhancement of patients' quality of life. The course includes practical applications, workshops, and clinical examples promoting interdisciplinary collaboration. Upon successful completion of the course, students are expected to be able to: 1. Analyze complex neuromusculoskeletal disorders of the lumbopelvic region and lower limb, considering physiological, biomechanical, and pathophysiological parameters. 2. Accurately and effectively assess complex clinical cases using advanced evaluation techniques and diagnostic tools. 3. Develop individualized treatment plans incorporating advanced therapeutic techniques such as functional rehabilitation, mobilization, and stabilization. 4. Integrate the use of specialized tools and technologies, including imaging and digital platforms for monitoring patient progress. 5. Apply the biopsychosocial model to manage chronic disorders, encouraging active patient participation in the therapeutic process. 6. Collaborate effectively with other health professionals to promote interdisciplinary care and improve therapeutic outcomes. 7. Critically evaluate literature and evidence-based practice, integrating findings into clinical decision-making. 8. Educate patients and their support networks by providing clear and practical guidance for prevention, management, and recovery. 9. Recognize ethical and deontological challenges associated with managing complex clinical cases, respecting patient preferences and needs. 10. Contribute to the improvement of clinical practice through continuous feedback and detailed case analysis.

General Skills
• Search for, analysis and synthesis of data and information, using the necessary technologies • Decision-making • Independent and group work • Critical thinking and self-assessment • Working in an interdisciplinary environment • Project planning and management • Respect for professional and ethical values • Promotion of free, creative, and inductive thinking

COURSE CONTENT

The course includes both theoretical and practical instruction on the following topics:	
1.	Advanced theoretical principles and models in neuromusculoskeletal management
2.	Complex functional anatomy and kinematics of the lumbopelvic region and lower limb
3.	Advanced physical assessment and differential diagnosis
4.	Analysis and management of chronic lumbopelvic conditions
5.	Management of functional hip and knee disorders
6.	Interventions for ankle and foot disorders
7.	Use of diagnostic imaging and evaluation via digital tools
8.	Application of specialized manual therapy and therapeutic exercise techniques
9.	Stabilization, strengthening, and functional recovery based on scientific evidence
10.	Return-to-activity programs and relapse prevention
11.	Clinical case analysis and development of clinical reasoning
12.	Patient and caregiver education
13.	Ethical approaches, evidence-based practice, and interdisciplinary collaboration

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: Face-to-face and distance education (synchronous / asynchronous) for selected modules.	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Advanced lab applications and simulated clinical practice	44
	Clinical decision-making and case analysis	20
	Literature review and evidence appraisal	35
	Development and presentation of individual rehabilitation plan	27
	Final examination preparation (written and practical)	22.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5

ASSESSMENT METHODS	• Midterm assignment (35%): Written work including a critical literature review or case analysis, applying evidence-based clinical reasoning. • Final written and practical examination (65%): The final assessment includes both a theoretical section (essay questions, clinical scenarios) and a practical section involving simulation-based clinical evaluation and treatment in pairs. Language of Assessment: Greek Assessment Criteria Access: The assessment criteria are explicitly defined and available to students on the course's Moodle (e-class) platform.
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SUGGESTED BIBLIOGRAPHY

- Cook, C. E., Hegedus, E. J., & Hooper, T. L. (2022). *Orthopedic Manual Therapy: An Evidence-Based Approach* (2nd ed.). Pearson.
- Jurak, I., Delaš, K., Erjavec, L., Stare, J., & Locatelli, I. (2023). Effects of Multidisciplinary Biopsychosocial Rehabilitation on Short-Term Pain and Disability in Chronic Low Back Pain: A Systematic Review with Network Meta-Analysis. *Journal of Clinical Medicine*, 12(23)
- Lee, D. (2019). *The Pelvic Girdle: An Integration of Clinical Expertise and Research* (5th ed.). Elsevier.
- Liebensohn, C. (2015). *Rehabilitation of the Spine: A Patient-Centered Approach* (2nd ed.). Wolters Kluwer Health.
- Magee, D. J. (2021). *Orthopedic Physical Assessment* (7th ed.). Elsevier.
- Neumann, D. A. (2017). *Kinesiology of the Musculoskeletal System: Foundations for Rehabilitation* (3rd ed.). Elsevier.
- Nijs, J., et al. (2021). In-depth clinical examination of patients with chronic spinal pain: From pathoanatomy to pain neuroscience. *Physical Therapy*, 101(3).
- O'Sullivan, P., & Lin, I. (2021). Integrating cognitive functional therapy into clinical practice. *Journal of Orthopaedic & Sports Physical Therapy*, 51(9), 425-428.
- Reiman, M. P., Mather, R. C., & Cook, C. E. (2023). Evidence-based hip and groin examination. *Journal of Sport Rehabilitation*, 32(1), 1–13.
- Sahrmann, S. A. (2011). *Diagnosis and Treatment of Movement Impairment Syndromes*. Elsevier Health Sciences.
- van Tulder, M., Maher, C., & Koes, B. (2018). Evidence-based management of low back pain. *Best Practice & Research Clinical Rheumatology*, 32(6), 789-798.

Semester 2 — Compulsory Modules

Exercise Prescription for the Musculoskeletal Patient

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM201	SEMESTER	2nd
COURSE TITLE	EXERCISE PRESCRIPTION FOR THE MUSCULOSKELETAL PATIENT		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Scientific Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
This course focuses on the principles of designing and implementing individualized exercise programs for patients with musculoskeletal disorders. It aims to enhance functional recovery, reduce pain, prevent relapses, and improve quality of life. Based on current evidence, the course combines theoretical foundations with practical skills for safe and effective exercise prescription. Upon successful completion of the course, students will be able to: • Understand the basic principles of evidence-based exercise prescription. • Functionally assess patients and identify their limitations. • Select and adapt exercises according to pathophysiology and therapeutic goals. • Design personalized rehabilitation programs. • Monitor and evaluate patient progress. • Manage chronic and complex conditions using exercise interventions. • Use technological and digital tools for patient monitoring. • Integrate interdisciplinary collaboration into rehabilitation planning. • Apply ethical standards and patient-centered approaches. • Analyze and revise therapeutic plans to optimize outcomes.
General Skills
• Analysis and synthesis of data using technology • Evidence-based decision-making • Independent and group work • Critical and self-critical thinking • Interdisciplinary collaboration • Intervention planning and management • Ethical and professional conduct • Creative and productive thinking

COURSE CONTENT

The course includes both theoretical and practical instruction on the following topics: • Principles of evidence-based exercise prescription • Physiological systems involved in exercise • Clinical assessment and functional testing • Categories of exercise: aerobic, anaerobic, balance, mobility • Intervention goals and individualization criteria • Exercise in common musculoskeletal conditions: low back pain, neck, knee, shoulder • Exercise in chronic conditions and multimorbidity • Addressing fatigue, pain, and fear of movement • Program adaptation and outcome monitoring • Use of technological tools (wearables, apps, platforms) • Patient communication and motivation for participation • Multidisciplinary collaboration for prescription and feedback • Case study presentation and critique

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: Face-to-face and distance learning (synchronous/asynchronous) for selected modules	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Activity	Semester Workload
	Lectures	39
	Laboratory and practical exercises / Simulation	40
	Preparation of midterm assignment	45
	Literature review and self-directed study	30
	Development of individual project	30
	Preparation for final written and practical examination	33.5
	Total Course Workload (25h per ECTS)	187.5 hours
ASSESSMENT METHODS	• Midterm assignment (35%): An individual assignment involving critical literature review or case analysis supported by evidence-based clinical reasoning. • Final written and practical examination (65%): The examination includes a theoretical component (essay questions, clinical scenarios) and a practical assessment through simulated applications (physical evaluation and treatment in student pairs). The language of assessment is Greek. The assessment criteria are described in detail on the course's e-class platform.	

SUGGESTED BIBLIOGRAPHY

- American College of Sports Medicine (2021) ACSM's guidelines for exercise testing and prescription. 11th edn. Philadelphia: Wolters Kluwer. ISBN: 9781975150198.
- Ehrman, J.K., Gordon, P.M., Visich, P.S. and Keteyian, S.J. (2021) Clinical exercise physiology. 5th edn. Champaign, IL: Human Kinetics. ISBN: 9781492591596..
- Hansen, B.H., Holtermann, A. and Aadahl, M. (2020) Exercise therapy: prevention and treatment of disease. 2nd edn. Amsterdam: Elsevier Health Sciences.
- Kisner, C. and Colby, L.A. (2021) Therapeutic exercise: foundations and techniques. 7th edn. Philadelphia: F.A. Davis Company. ISBN: 9781719644261.
- Nagel, J., Wegener, F., Grim, C., & Hoppe, M. W. (2024). Effects of Digital Physical Health Exercises on Musculoskeletal Diseases: Systematic Review with Best-Evidence Synthesis. JMIR mHealth and uHealth, 12, e50616.
- National Institute for Health and Care Excellence (NICE) (2023) Physical activity: exercise referral schemes. Public health guideline [PH54]. Available at: <https://www.nice.org.uk/guidance/ph54>
- World Health Organization (WHO) (2020) Guidelines on physical activity and sedentary behaviour. Available at: <https://www.who.int/publications/i/item/9789240015128>

Integrative Assessment and Management of Musculoskeletal Patients II

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM202	SEMESTER	2nd
COURSE TITLE	INTEGRATIVE ASSESSMENT AND MANAGEMENT OF MUSCULOSKELETAL PATIENTS II		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Scientific Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
This course focuses on advanced understanding and application of clinical reasoning techniques for pain management. It emphasizes the integration of information from psychology, pharmacology, and clinical skills to develop individualized treatment plans. Students will explore topics related to pain assessment and management, delve into the psychological effects of pain on patients, and investigate pharmacological and non-pharmacological interventions. Additionally, they will practice decision-making through simulated clinical scenarios. Upon successful completion of the course, students will be able to: 1. Evaluate complex pain cases, considering the biopsychosocial factors and their interactions. 2. Design specialized pain management plans tailored to individual patient needs and characteristics. 3. Recognize the limitations and capabilities of diagnostic tools and apply them accurately and reliably. 4. Analyze and interpret the psychological aspects of pain and their impact on patients' quality of life. 5. Utilize appropriate non-pharmacological interventions for pain management. 6. Integrate the biopsychosocial approach into therapeutic practice. 7. Apply advanced assessment techniques, including movement and functional capacity analysis. 8. Implement evidence-based therapeutic interventions to reduce pain and improve quality of life. 9. Develop interdisciplinary collaboration skills with other healthcare professionals. 10. Manage chronic pain using multifactorial approaches and strategies for long-term support. 11. Analyze clinical case data to identify root causes of pain and optimal interventions. 12. Incorporate current research findings into innovative pain management strategies. 13. Address ethical and deontological issues, respecting patient autonomy and dignity. 14. Apply high-level strategies and clinical practices in complex pain management, enhancing professional development.
General Skills
• Search, analysis, and synthesis of data and information using the necessary technologies

- Decision-making
- Autonomous and group work
- Critical thinking and self-assessment
- Work in interdisciplinary environments
- Project planning and management
- Respect for professional and ethical principles
- Promotion of free, creative, and inductive thinking

COURSE CONTENT

The course includes both theoretical and practical instruction on the following topics:

- Introduction to chronic and complex pain – theoretical models and epidemiological data
- Clinical pain assessment – history taking, structured interviews, and questionnaires
- Analysis of biological, psychological, and social factors influencing pain experience
- Advanced physical assessment techniques (mobility, posture, movement patterns)
- Functional capacity and quality of life evaluation – tools and scales
- Psychological theories of pain and patient communication strategies
- Pharmacological pain management – indications, contraindications, and interactions
- Non-pharmacological interventions – exercise, manual therapy, cognitive-behavioral therapy
- Design of individualized rehabilitation programs for patients with chronic pain
- Clinical reasoning and decision-making in complex pain cases
- Ethical dilemmas and management of patient expectations
- Simulations and case study analysis
- Integration of bibliographic data and evidence-based guidelines into clinical practice

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: face-to-face and distance education (synchronous/asynchronous) in selected modules	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Independent study / comprehension exercises	30
	Literature study and analysis	35
	Preparation of mid-term assignment	35
	Preparation for final examination	25
	Reading and solving clinical case studies	15
	Participation in simulations and feedback	6
	Review and content revision	2.5
	Total Course Load (25 hours per ECTS)	187.5
ASSESSMENT METHODS	• Mid-term written assignment (40%): Case analysis or thematic literature review applying theoretical assessment tools based on clinical reasoning. • Final written examination (60%): Includes essay-type questions, clinical scenarios, and application of clinical reasoning principles. The language of assessment is Greek. Assessment criteria are clearly stated and available on the course e-class platform.	

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- Bussieres, A. E., Stewart, G., Al-Zoubi, F., et al. (2016). Treatment of neck pain and whiplash-associated disorders: A clinical practice guideline. *J Manipulative Physiol Ther*, 39(8), 523–564.
- Chou, R., Gordon, D. B., de Leon-Casasola, O. A., et al. (2016). Management of postoperative pain: A clinical practice guideline. *The Journal of Pain*, 17(2), 131–157.
- Darnall, B.D. (2023). *Psychological Treatment for Patients with Chronic Pain*. Oxford University Press
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- Melzack, R., & Wall, P. D. (2018). *Textbook of Pain* (6th ed.). Elsevier.
- Urits, I., et al. (2023). Multimodal non-invasive non-pharmacological therapies for chronic pain: A narrative review. *BMC Medicine*, 21, 76.
- Vlaeyen, J. W., & Linton, S. J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain*, 153(6), 1144–1147.

Neuromusculoskeletal Management of the Cervicothoracic Region and Upper Limb (Basic)

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM203	SEMESTER	2nd
COURSE TITLE	NEUROMUSCULOSKELETAL MANAGEMENT OF THE CERVICOTHORACIC REGION AND UPPER LIMB (BASIC)		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Scientific Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
This course focuses on the fundamental understanding and management of neuromusculoskeletal disorders affecting the cervicothoracic region and upper limb. The course aims to develop the necessary knowledge and skills to identify, assess, and deliver basic therapeutic interventions for common and complex conditions of this area. Students will be introduced to core concepts of clinical anatomy and kinesiology, as well as evaluation techniques for joint function and mobility. Emphasis is placed on understanding the etiology and pathophysiology of these disorders and on the implementation of therapeutic approaches, including mobilization techniques, exercise, and pain management. Upon successful completion of the course, students will be able to: 1. Understand the structure and function of the cervicothoracic region and upper limb through clinical anatomy and kinesiology. 2. Evaluate functional capacity and mobility of the cervicothoracic region and upper limb using basic assessment tools and techniques. 3. Recognize common disorders of the cervicothoracic region and upper limb, including musculoskeletal, neurological, and traumatic conditions. 4. Apply basic therapeutic interventions, including mobilization techniques, therapeutic exercise, and pain management. 5. Develop history taking and clinical examination skills to identify and document patients' needs. 6. Understand the impact of pain and dysfunctions on patients' quality of life by applying a holistic care approach. 7. Analyze clinical case data to comprehend pathophysiology and adapt therapeutic interventions accordingly. 8. Become familiar with the biopsychosocial model in patient management, considering psychological and social factors. 9. Collaborate with other healthcare professionals, when necessary, for optimal patient care.

10. Follow evidence-based practice principles by integrating current research data into therapeutic strategies. 11. Be equipped with theoretical knowledge and practical skills that form the basis for further specialization in cervicothoracic and upper limb management.
General Skills • Search, analysis, and synthesis of data and information using the necessary technologies • Decision-making • Autonomous and group work • Critical thinking and self-criticism • Working in an interdisciplinary environment • Project planning and management • Respect for professional and ethical standards • Promotion of free, creative, and inductive thinking

COURSE CONTENT

• Clinical anatomy and kinesiology of the cervicothoracic region and upper limb • Physiology and pathophysiology of pain in the region • Mobility and functional assessment techniques (Part A) • Posture and stability assessment techniques (Part B) • Cervical pain and pain mechanisms • Thoracic outlet syndrome – assessment and therapeutic approach • Shoulder girdle conditions – kinesiological impairments and intervention • Epicondylitis and elbow pathologies – clinical approach • Wrist and hand disorders – carpal tunnel syndrome • Mobilization and pain management techniques (manual therapy – soft tissue techniques) • Introduction to evidence-based clinical practice and use of clinical guidelines • Clinical case analysis and decision-making • Course review – questions, assignments, and final evaluation preparation
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TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: face-to-face and distance education (synchronous/asynchronous) in selected modules	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Laboratory and practical exercises / Clinical simulations	40
	Literature review and independent study	45
	Development of midterm assignment (theoretical or clinical case study analysis)	30
	Preparation for final written and practical examination	33.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5
ASSESSMENT METHODS	• Mid-term written assignment (40%): Case analysis or thematic literature review applying theoretical assessment tools based on clinical reasoning. • Final written examination (60%): Includes essay-type questions, clinical scenarios, and application of clinical reasoning principles. The language of assessment is Greek. Assessment criteria are clearly stated and available on the course e-class platform	

SUGGESTED BIBLIOGRAPHY

- Cleland, J. A., Mintken, P. E., & Whitman, J. M. (2022). Evidence for the short-term effectiveness of cervicothoracic manual physical therapy in reducing pain and improving function: A systematic review. *Musculoskeletal Science and Practice*, 62.
- Lippert, L. S. (2022). *Clinical Kinesiology and Anatomy* (7th ed.). F.A. Davis.
- Sahrmann, S. A. (2020). *Diagnosis and Treatment of Movement System Impairment Syndromes* (Revised ed.). Elsevier.
- Sanders, R. J., Annest, S. J., & Rao, N. M. (2023). Current concepts in the management of neurogenic thoracic outlet syndrome. *Plastic and Reconstructive Surgery – Global Open*, 11(3).
- Castaldo, M., Arendt-Nielsen, L., & Di Antonio, S. (2025). A clinical guide for physiotherapists to assess and manage cervical musculoskeletal impairment and pain sensitivity in migraine patients. *Journal of Manual & Manipulative Therapy*, 1-18.
- Cook, C. (2012). *Orthopedic Manual Therapy: An Evidence-Based Approach* (2nd ed.). Pearson.
- Grieve, G. (2015). *Grieve's Modern Musculoskeletal Physiotherapy* (4th ed.). Elsevier.
- Hertling, D., & Kessler, R. M. (2020). *Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods* (4th ed.). Lippincott Williams & Wilkins.
- Mintken, P. E., McDevitt, A. W., Cleland, J. A., Boyles, R. E., Beardslee, A. R., Burns, S. A., ... & Michener, L. A. (2016). Cervicothoracic manual therapy plus exercise therapy versus exercise therapy alone in the management of individuals with shoulder pain: a multicenter randomized controlled trial. *Journal of orthopaedic & sports physical therapy*, 46(8), 617-628.
- NICE National Guideline Centre. (2021). Evidence Review for Manual Therapy for Chronic Primary Pain (NICE Guideline 193).
- Petty, N. J., & Moore, A. P. (2018). *Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists* (5th ed.). Elsevier.
- Petty, N.J. (2023) *Petty's Principles of Musculoskeletal Treatment and Management: A Handbook for Therapists*. 4th edn. London: Elsevier.
- Rushton, A., Carlesso, L. C., Flynn, T., Hing, W. A., Rubinstein, S. M., Vogel, S., & Kerry, R. (2023). International framework for examination of the cervical region for potential of vascular pathologies of the neck prior to musculoskeletal intervention: international IFOMPT cervical framework. *Journal of orthopaedic & sports physical therapy*, 53(1), 7-22.

Neuromusculoskeletal Management of the Cervicothoracic Region and Upper Limb (Advanced)

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM204	SEMESTER	2nd
COURSE TITLE	NEUROMUSCULOSKELETAL MANAGEMENT OF THE CERVICOTHORACIC REGION AND UPPER LIMB (ADVANCED)		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
Lectures and Practical Exercises		3	7.5
COURSE TYPE	Scientific Area, Skills Development		
CORE COURSE AS PREREQUISITIVE:	No		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
This course focuses on the advanced understanding and management of neuromusculoskeletal disorders of the cervicothoracic region and upper limb. It aims to enhance students' skills in complex clinical reasoning, specialized assessment, and evidence-based therapeutic interventions. Emphasis is placed on the differential diagnosis of complex clinical presentations, advanced evaluation and treatment techniques, and the biopsychosocial approach. The course includes the use of modern technologies, analysis of clinical data, and the design of individualized rehabilitation plans. Upon successful completion of the course, students will be able to: 1. Distinguish complex pathologies of the cervicothoracic region and upper limb through advanced assessment and differential diagnosis techniques. 2. Develop specialized treatment plans tailored to the specific needs and characteristics of each patient. 3. Apply advanced mobilization and manual techniques with precision and effectiveness. 4. Utilize modern technologies and tools, such as ultrasound and electromyography, to optimize diagnosis and treatment. 5. Integrate the biopsychosocial approach by considering psychological and social factors affecting recovery. 6. Recognize the impact of chronic and complex conditions on patients' quality of life and apply appropriate management strategies. 7. Analyze and re-evaluate treatment outcomes using clinical indicators and research data. 8. Engage in interdisciplinary collaboration, incorporating input from other health professionals to ensure holistic patient care. 9. Manage complex cases ethically and professionally, in alignment with evidence-based practice principles. 10. Propose innovative treatment approaches using current research findings to continuously improve patient care.

General Skills

- Search, analysis, and synthesis of data and information using the necessary technologies
- Decision-making
- Autonomous and group work
- Critical thinking and self-criticism
- Working in an interdisciplinary environment
- Project planning and management
- Respect for professional and ethical standards
- Promotion of free, creative, and inductive thinking

COURSE CONTENT

- The course includes both theoretical and practical instruction on the following topics:
- Advanced clinical anatomy and kinesiology of the cervicothoracic region and upper limb
 - In-depth understanding of neuromuscular coordination and dysfunction
 - Differential diagnosis of neuromusculoskeletal disorders based on history and clinical presentation
 - Specialized techniques for assessing mobility and neurological function
 - Application of ultrasound and other technologies in clinical assessment
 - Complex clinical scenarios: cervical radiculopathy, thoracic outlet syndrome
 - Advanced manual therapy and soft tissue mobilization techniques
 - Individualized therapeutic exercises and rehabilitation programs
 - Use of electromyography and ergonomic tools in clinical practice
 - Strategies for managing chronic and complex pain
 - Development of treatment plans based on evidence and clinical judgment
 - Holistic approach: integration of psychological and social factors
 - Presentation and analysis of complex cases with emphasis on clinical decision-making and documentation

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Blended learning: face-to-face and distance education (synchronous/asynchronous) in selected modules	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Lectures	39
	Advanced lab applications and simulated clinical practice	44
	Clinical decision-making and case analysis	20
	Literature review and evidence appraisal	35
	Development and presentation of individual rehabilitation plan	27
	Final examination preparation (written and practical)	22.5
	Course Total (25 hours per credit point: 25 x 10 ECTS)	187.5
ASSESSMENT METHODS	• Midterm assignment (35%): Individual written work involving critical literature analysis or case analysis supported by evidence-based clinical reasoning. • Final written and practical examination (65%): The exam includes a theoretical component (essay questions, clinical scenarios) and a practical assessment through simulated applications (physical evaluation and treatment performed in student pairs). The language of assessment is Greek. Assessment criteria are clearly stated and available on the course e-class platform	

SUGGESTED BIBLIOGRAPHY

- Cleland, J. A., Mintken, P. E., & Whitman, J. M. (2022). Evidence for the short-term effectiveness of cervicothoracic manual physical therapy in reducing pain and improving function: A systematic review. *Musculoskeletal Science and Practice*, 62.
- Lippert, L. S. (2022). *Clinical Kinesiology and Anatomy* (7th ed.). F.A. Davis.
- Sahrmann, S. A. (2020). *Diagnosis and Treatment of Movement System Impairment Syndromes* (Revised ed.). Elsevier.
- Sanders, R. J., Annest, S. J., & Rao, N. M. (2023). Current concepts in the management of neurogenic thoracic outlet syndrome. *Plastic and Reconstructive Surgery – Global Open*, 11(3).
- Castaldo, M., Arendt-Nielsen, L., & Di Antonio, S. (2025). A clinical guide for physiotherapists to assess and manage cervical musculoskeletal impairment and pain sensitivity in migraine patients. *Journal of Manual & Manipulative Therapy*, 1-18.
- Cook, C. (2012). *Orthopedic Manual Therapy: An Evidence-Based Approach* (2nd ed.). Pearson.
- Grieve, G. (2015). *Grieve's Modern Musculoskeletal Physiotherapy* (4th ed.). Elsevier.
- Hertling, D., & Kessler, R. M. (2020). *Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods* (4th ed.). Lippincott Williams & Wilkins.
- Mintken, P. E., McDevitt, A. W., Cleland, J. A., Boyles, R. E., Beardslee, A. R., Burns, S. A., ... & Michener, L. A. (2016). Cervicothoracic manual therapy plus exercise therapy versus exercise therapy alone in the management of individuals with shoulder pain: a multicenter randomized controlled trial. *Journal of orthopaedic & sports physical therapy*, 46(8), 617-628.
- NICE National Guideline Centre. (2021). Evidence Review for Manual Therapy for Chronic Primary Pain (NICE Guideline 193).
- Petty, N. J., & Moore, A. P. (2018). *Neuromusculoskeletal Examination and Assessment: A Handbook for Therapists* (5th ed.). Elsevier.
- Petty, N.J. (2023) *Petty's Principles of Musculoskeletal Treatment and Management: A Handbook for Therapists*. 4th edn. London: Elsevier.
- Rushton, A., Carlesso, L. C., Flynn, T., Hing, W. A., Rubinstein, S. M., Vogel, S., & Kerry, R. (2023). International framework for examination of the cervical region for potential of vascular pathologies of the neck prior to musculoskeletal intervention: international IFOMPT cervical framework. *Journal of orthopaedic & sports physical therapy*, 53(1), 7-22.

Semester 3 — Compulsory Modules

Master's Thesis

COURSE OUTLINE

SCHOOL	HEALTH SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
PROGRAM OF STUDY	POSTGRADUATE		
COURSE CODE	MM300	SEMESTER	3rd
COURSE TITLE	Master's Thesis		
TEACHING ACTIVITIES		TEACHING HOURS	ECTS
		Guided study and research – 750 hours in total	30
COURSE TYPE	Background, General Knowledge, Scientific Area, Skills Development Scientific Area – Specialization		
CORE COURSE AS PREREQUISITIVE:	1st and 2nd semester		
LANGUAGE OF TEACHING AND ASSESSMENT:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBPAGE (URL)	Course page in e-class platform		

LEARNING OUTCOMES

Learning Outcomes
The Master's Thesis constitutes the culmination of the MSc "Evidence-Based Physiotherapeutic Management of Musculoskeletal Patients". Its purpose is the synthesis and application of knowledge acquired during the first two semesters, with in-depth exploration of a specific area of Musculoskeletal Physiotherapy through a structured research process. Upon completion of the Master's Thesis, students will be able to: i) Design and conduct original research in the field of musculoskeletal physiotherapy. ii) Search, analyze, and synthesize scientific data from international databases (e.g., PubMed, Cochrane). iii) Select and apply appropriate research tools (quantitative, qualitative, or mixed methods). iv) Justify clinical decisions based on evidence-based practice. v) Present their findings clearly and with scientific accuracy to both specialist and non-specialist audiences. vi) Identify clinical and research implications, proposing applications and directions for future research. vii) Propose innovative approaches to treatment by integrating contemporary research findings for the continuous improvement of patient care.
General Skills
• Searching, analyzing, and synthesizing data using ICT tools • Independent work and decision-making in clinical and research contexts • Generation of new research ideas • Working in an interdisciplinary environment • Respect for ethics, diversity, and social responsibility • Promotion of critical and creative thinking

COURSE CONTENT

A) Submission of the research proposal, including: - Title - Introduction & Aim - Literature Review - Methodology - Timeline - References B) Research implementation: - Data collection and analysis - Synthesis of findings in relation to the international literature - Drawing conclusions and making recommendations C) Submission & Public Defense of the Master's Thesis before a three-member examination committee

TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING METHODS	Face-to-face and/or online meetings with the supervisor, combined with distance support through the e-Class platform	
USE OF ICT	Use of I.C.T. in Teaching and Communication with students (moodle, zoom, email)	
LEARNING ACTIVITIES	Activity	Semester Workload
	Supervised study with supervisor	50
	Literature review & study	200
	Data collection/analysis	250
	Writing of dissertation text	200
	Preparation and presentation	50
	Course Total (25 hours per credit point: 25 x 10 ECTS)	750
ASSESSMENT METHODS	- Scientific completeness and originality (30%) - Methodological accuracy (25%) - Clarity of presentation and logical structure (15%) - Correlation with international literature (15%) - Successful public defense (15%) - Grading scale: 0–10 (≥6 pass).	

SUGGESTED BIBLIOGRAPHY

- Creswell, J. (2016). Η έρευνα στην Εκπαίδευση: Σχεδιασμός, Διεξαγωγή και Αξιολόγηση Ποσοτικής και Ποιοτικής Έρευνας (Χ. Τσορμπατζούδης, επιμ.). ΙΟΝ. (Research in Education: Design, Implementation and Evaluation of Quantitative and Qualitative Research, Ed. Ch. Tsormpatzoudis. ION). - Creswell, J., & Creswell, J. D. (2021). Σχεδιασμός έρευνας: Προσεγγίσεις Ποιοτικών, Ποσοτικών και Μεικτών Μεθόδων (Η. Σαντουρίδης, Τ. Παγγέ, επιστ. επιμ.). ΠΡΟΠΟΜΠΟΣ. (Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Scientific Eds. H. Santouridis, T. Pagge. Propompos). - Ευδωρίδου, Ε., & Καρακασίδης, Θ. (2018). Ακαδημαϊκή γραφή (3η έκδ.). Τζιόλας. (Academic Writing, 3rd ed. Tziolas). - Ζαφειρόπουλος, Κ. (2015). Πώς γίνεται μια επιστημονική εργασία; (2η έκδ.). Κριτική. (How to Write a Scientific Paper?, 2nd ed. Kritiki). - Λιαγκόρβας, Π., Δερμάτης, Ζ., & Κομνηνός, Δ. (2018). Μεθοδολογία της Έρευνας και Συγγραφή Επιστημονικών Εργασιών. Τζιόλας. (Research Methodology and Writing of Scientific Papers. Tziolas).
