

**Physiotherapy in the Pathology of the Locomotor System I**

Code: 102982  
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OB	2	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

### Contact

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### Use of Languages

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: No

### Teachers

Manuel Moreno Moreno

### Prerequisites

It is recommended to have the acquired knowledge of Anatomy and Physiology of the locomotor system, the foundations of Physiotherapy, Biophysics, Human pathology and Instrumental assessment in physiotherapy of the locomotor system.

### Objectives and Contextualisation

The objectives of the subject are focused on the student being able to:

- To develop the acquired knowledge in subjects previously to the clinical field of treatment of pathologies of the locomotor system.
- To perform a functional assessment of the patient with mechanical dysfunction of the locomotor system, to prepare a physiotherapeutic diagnosis, to establish therapeutic objectives and to design a treatment.
- To give a global focus on the different mechanical dysfunctions of the locomotor system related to the lower limb.
- To apply the different physiotherapy techniques and to be able to analyze, adapt and control the results.
- To solve clinical cases susceptible to physiotherapeutic treatment in the area of system conditions skeletal muscle.

### Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Analyse and synthesise.
- Apply quality-assurance mechanisms in physiotherapy practice, in accordance with the recognised and validated criteria.
- Design the physiotherapy intervention plan in accordance with the criteria of appropriateness, validity and efficiency.
- Display critical reasoning skills.
- Display knowledge of the morphology, physiology, pathology and conduct of both healthy and sick people, in the natural and social environment.
- Display knowledge of the physiotherapy methods, procedures and interventions in clinical therapeutics.
- Evaluate the functional state of the patient, considering the physical, psychological and social aspects.
- Express ideas fluently, coherently and correctly, both orally and in writing.
- Integrate, through clinical experience, the ethical and professional values, knowledge, skills and attitudes of physiotherapy, in order to resolve specific clinical cases in the hospital and non-hospital environments, and primary and community care.
- Make a physiotherapy diagnosis applying internationally recognised norms and validation instruments.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Make the most correct decisions in given situations.
- Organise and plan.
- Participate in drawing up physiotherapy protocols on the basis of scientific evidence, and promote professional activities that facilitate physiotherapy research.
- Solve problems.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.

## Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Analyse and synthesise.
3. Apply physiotherapy methods, procedures and interventions in the different clinical specialisations that treat conditions of the musculoskeletal system.
4. Apply specific physiotherapy methods to promote a healthy lifestyle, in relation to the musculoskeletal system, through health education.
5. Communicate using language that is not sexist.
6. Consider how gender stereotypes and roles impinge on the exercise of the profession.
7. Critically analyse the principles, values and procedures that govern the exercise of the profession.
8. Define general and specific objectives when using physiotherapy treatment for disorders of the musculoskeletal system.
9. Describe and analyse human movement.
10. Describe and analyse the evidence-based physiotherapy protocols for disorders of the musculoskeletal system.
11. Describe and apply advanced evaluation procedures in physiotherapy in order to determine the degree of damage to the musculoskeletal system and possible functional repercussions.
12. Describe clinical practice guidelines applied to disorders of the musculoskeletal system.
13. Describe the circumstances that can influence priorities when using physiotherapy to treat disorders of the musculoskeletal system.
14. Display critical reasoning skills.
15. Enumerate the different types of material and apparatus for using physiotherapy to treat disorders of the musculoskeletal system.
16. Establish diagnostic physiotherapy hypotheses through clinical cases with disorders of the musculoskeletal system.
17. Express ideas fluently, coherently and correctly, both orally and in writing.
18. Identify situations in which a change or improvement is needed.

19. Identify the physiological and structural changes that may occur as a result of physiotherapy intervention in disorders of the musculoskeletal system.
20. Identify the principal forms of sex- or gender-based inequality present in society.
21. Identify the social, economic and environmental implications of academic and professional activities within one's own area of knowledge.
22. Locate the different muscles through surface palpation.
23. Make the most correct decisions in given situations.
24. Organise and plan.
25. Propose new methods or well-founded alternative solutions.
26. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
27. Propose projects and actions that incorporate the gender perspective.
28. Propose viable projects and actions to boost social, economic and environmental benefits.
29. Propose ways to evaluate projects and actions for improving sustainability.
30. Solve problems.
31. Use physiotherapy to treat clinical cases involving musculoskeletal system conditions.
32. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
33. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.

## Content

The subject focuses on the physiotherapeutic treatment of mechanical dysfunctions (traumatic and degenerative) of the locomotor system, specifically the lower limb, based on a global and analytical approach.

### 1. GENERALITIES OF THE SUBJECT. (Christian Fernández)

Presentation of the program. Fundamentals and concepts of the subject. Global vision of the subject. Goals proposed. Type of evaluation, seminars. Faculty presentation and bibliography.

### 2. GLOBAL ASSESMENT OF THE MECHANICAL DISEASES OF THE LOWER LIMB. (Christian Fernández).

Establishment of a care plan: Review of the clinical history in the mechanical dysfunction of the locomotor system, anamnesis, interpretation of complementary tests, mechanical evaluation of the injury, differential diagnosis hypothesis. Global exploration and evaluation of the EEII. Sequential planning of the treatment. Concepts of the global approach to the treatment and general principles of biomechanics.

### 3. PHYSIOTHERAPY OF THE TRAUMATIC PATHOLOGY OF THE LOWER LIMB: GENERALITIES. (Christian Fernández)

General treatment of fractures (open, closed, surgical, non-surgical), muscle and tendon injuries. Complications of fractures: SRDC, rigidity, adhesions.

### 4. PHYSIOTHERAPY OF THE DISFUNCTION AND PATHOLOGY OF HIP AND PELVIS (Christian Fernández).

Principles of biomechanics, injury mechanism, physiotherapy treatment and considerations of fractures on pelvis and hip.

Principles of biomechanics, injury mechanism, physiotherapy treatment and main considerations orthopedic and degenerative diseases (labrum, coxartrosis, arthroplasty, osteosynthesis, pubalysis).

### 5. PHYSIOTHERAPY OF THE KNEE DYSFUNCTION AND PATHOLOGY. (Christian Fernández/Manuel Moreno).

Principles of biomechanics, injury mechanism, physiotherapy treatment and considerations of fractures knee.

Principles of biomechanics, injury mechanism, physiotherapy treatment and main considerations on orthopedic and degenerative diseases.

Principles of biomechanics, injury mechanism, physiotherapy treatment and main considerations on ligamentous injuries (lateral and crossed ligaments), meniscal and tendinous.

#### 6. PHYSIOTHERAPY OF DYSFUNCTION AND PATHOLOGY OF ANKLE AND FOOT. (Manuel Moreno).

Principles of biomechanics, injury mechanism, physiotherapy treatment and main considerations on ankle and foot fractures.

Principles of biomechanics, lesion mechanism, physiotherapy treatment and main considerations ligamentous and tendon injuries.

Dynamic walking study and plantar orthoses.

#### 7. PHYSIOTHERAPY OF THE REUMATOLOGICAL PATIENT: (Christian Fernández/Manuel Moreno).

Rheumatological patient profile. Physiotherapy treatment and considerations on inflammatory and degenerative pathology.

#### PRACTICAL SEMINARS: PLAB

SEMINAR I - Exploration and global assessment of the patient with mechanical dysfunction of the lower limb.

SEMINAR II - Muscular and proprioceptive work of the EEII. Basic methods and materials for rehabilitation (rubber, bossu, fitball, unstable floors, dumbbells, crutches, balls ...).

SEMINAR III - Techniques of manual therapy of the EEII in the different complications: rigidity, edema, scar, spasm ...

SEMINAR IV - Functional and neuromuscular bandages of the EEII.

SEMINAR V - Planning of treatments and clinical cases. Preparation of a program according to the stage of the pathology.

## Methodology

Theoretical-practical classes and practical seminars (see contents). Preparation of an individual research work and/or an oral group presentation. Due to the events on COVID-19, the theoretical classes will surely be held online. They can be done live or the teacher can leave the class hanging on the virtual campus for the student to view.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES (PLAB)	18	0.72	2, 11, 16, 17, 24, 23, 14, 31
THEORY (TE)	27	1.08	3, 4, 9, 19, 22, 31
Type: Supervised			
ORAL PRESENTATION / EXHIBITION OF WRITTEN WORKS	0	0	17, 24
Type: Autonomous			

PREPARATION OF WRITTEN WORKS	33	1.32	3, 4, 8, 9, 10, 11, 13, 12, 15, 16, 17, 19, 22, 24, 31, 30
READING ARTICLES / REPORTS OF INTEREST	30	1.2	3, 4, 8, 9, 10, 11, 13, 12, 15, 16, 19, 22, 31
SELF STUDY	40	1.6	2, 3, 4, 8, 9, 11, 13, 15, 16, 19, 22, 24, 23, 14, 31

## Assessment

The FINAL evaluation of the subject will consist of: exam type test of the contents taught in the theoretical classes and the topics taught in the seminars. This test will consist of 40 questions test (with 4 answer options of which only 1 will be valid and the wrong answers will subtract 0.33).

Evaluation of the specialized seminars: the student will demonstrate to perform different techniques physiotherapy treatment in the practical exam. In the event of not being able to attend a face-to-face exam, a written exam may be held in which some questions about clinical cases or a video presentation must be answered.

Presentation of a work based on bibliographic research and oral presentation in class (the oral presentation will be done online and does not score).

The percentage of each part to the final grade of the subject will be: 45% mark of the test, 35% mark of the practical exam, 20% mark of the presentation of the scientific research work. Attendance at practical seminars is mandatory.

To apply these percentages it is essential to have a minimum of 5.00 in the test and the practical exam and do not have a score of 0.00 in the research work.

The final grade of the subject will have a numerical expression, with a decimal, on the scale 0-10 and with the qualitative equivalence in accordance with the criteria of the UAB, fail, pass, good and merit (with the option of obtaining the Honour distinction).

When it is considered that the student has not been able to provide sufficient evidences of evaluation in the record will be consigned this subject as not evaluable (Art 116.8.)

The procedure for reviewing the tests will be in accordance with the current regulations of the UAB and in any case will be individual, upon written request within the established deadlines.

Students who have not passed the subject / module through the continuous assessment may submit to a recovery exam.

The evaluation of the subject contemplates the following sections:

The 45% of the final grade will be written test:

Test with 40 multiple choice questions. Each question answered correctly will be assessed with 1 point. Les questions answered wrongly will subtract 0.33 points. Unsolved questions will not subtract points.

The 35% of the final grade will be the practical examination where different treatment techniques will be carried out: the theoretical knowledge, the application of the technique will be assessed and communication with the patient.

The 20% of the final grade will be the research work: Plagiarism is totally penalized with the suspension of work. Plagiarism will be considered from 15% according to the UAB application.

Individual research work and oral presentation in group class. The research work will be assessed with an individual mark and oral group presentation.

Art 116.8. When it is considered that the student has not been able to provide sufficient evidences of evaluation it is will assign in the record this subject as not evaluable.

Class attendance.

- Theoretical classes. The attendance is not obligatory but it is highly recommendable since it is during these classes when the continuous assessment exercises are worked.

- Practical classes. Attendance is 100% mandatory. Justified absence will be accepted for medical reasons (with the corresponding medical certificate). Each unexcused absence will discount 0.5 points of the final grade of the subject (each of them), as long as these do not exceed 20% of the total.

In case of exceptional circumstances that do not allow the attendance in person to the classes, is They will use the digital platforms (TEAMS, ZOOM, ..). In the case of the Practical classes and the Seminars of clinical cases, the attendance will be compulsory in the same termite that if it were in person (100%) and will do by means of the connection to the different platforms following indications of the teaching team.

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Delivery of reports / written works	20%	0	0	7, 2, 3, 4, 5, 13, 12, 17, 21, 20, 24, 33, 23, 29, 26, 27, 28, 14, 31, 30, 6, 32
Practical evaluation through objective and structured clinical examination	35%	1	0.04	1, 3, 4, 8, 10, 11, 13, 12, 15, 17, 19, 18, 23, 25, 14, 31
Written evaluations through objective tests: multiple choice questions	45%	1	0.04	3, 4, 8, 9, 10, 11, 13, 12, 15, 16, 19, 22, 31

## Bibliography

Books

Sobotta. Atlas de anatomía humana. 23edición. Ed Panamericana.; 2019.

Cael. Anatomía Funcional. Estructura, función y palpación del aparato locomotor para terapeutas mauales. Ed. Panamericaca 2013

Patton & Thibodeau. Anatomía y fisiología.8 edición. Ed Elsevier; 2013.

A. I. Kapandji. Fisiología articular. 6 edición. Ed Panamericana; 2012.

Paoletti, Serge. Las fascias. El papel de los tejidos en la mecánica humana. 1 edición. Ed Paidotribo; 2019.

Buckup & Buckup. Pruebas clínicas para patología ósea, articular y muscular: Exploraciones, signos y síntomas. 5 edición. Ed Elsevier Masson; 2014.

Bernhard Ehmer. Fisioterapia en ortopedia y traumatologia. 2 Edición. Ed Mcgraw-hill; 2005.

Yves Xhardez.Vademecum de kinesioterapia y de reeducacion funcional. 5 edición. Ed El Ateneo; 2012.

Herbert Frisch. Método de exploración del aparato locomotor y de la postura: diagnóstico a través de la terapia manual. 1a edición. Ed Paidotribo; 2005.

C. Génot, Henri Neiger (†), A. Leroy, G. Pierron, M. Dufour, G. Péninou, J. M. Dupré. Kinesioterapia Tomo 1

Principios. Miembros inferiores. Evaluaciones. Técnicas pasivas y activas del aparato locomotor. 1 edición. Ed. Médica Panamericana; 1988.

Kendall, F. Músculos: pruebas y funciones. Postura y dolores. 5 edición. Ed Marbán; 2007.

Christy Cael. Anatomía Funcional. Estructura, función y palpación para terapeutas manuales. EdPanamericana; 2013

Esther Díaz Mohedo. Manual de Fisioterapia en Traumatología. Ed. Elsevier; 2015

O. Mayoral. I. Salvat. Fisioterapia Invasiva del Síndrome de Dolor Miofascial. Manual de punción seca de puntos gatillo. Ed Panamericana; 2017

J. Seco Calvo. Fisioterapia en Especialidades Clínicas. Ed. Panamericana 2016

#### Scientific magazines

- Journal of Physiotherapy (AUS): <http://www.journalofphysiotherapy.com/>
- Physiotherapy (CAN): <http://www.physiotherapyjournal.com/>
- Physicaltherapy (USA): <https://academic.oup.com/ptj>
- The american journal of sports medicine (USA): <http://journals.sagepub.com/home/ajs>
- British journal sports medicine (GRB): <http://bjsm.bmj.com/>
- Kinesitherapie (FRA): <https://www.journals.elsevier.com/kinesitherapie-la-revue/>
- Kinesitherapie scientifique (FRA): <https://www.ks-mag.com/>

#### Clinical Practice Guidelines

##### HIP

- [Hip Pain and Mobility Deficits - Hip Osteoarthritis: Revision 2017.](#)
- [ENSEKI, KEELAN; HARRIS-HAYES, MARCIE; WHITE, DOUGLAS M.; CIBULKA, MICHAEL T.; WOEHRLE, JUDITH; FAGERSON, TIMOTHY L.; CLOHISY, JOHN C. "Nonarthritic Hip Joint Pain: Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability and HealthFrom the Orthopaedic Section of the American Physical Therapy Association", Journal of Orthopaedic & Sports Physical Therapy \(J ORTHOP SPORTS PHYS THER\), Jun2014; 44\(6\): A1-A32. \(32p\).](#)
- [Management of hip fractures in the elderly - evidence-based clinical practice guideline.](#)

##### KNEE

- [Knee Pain and Mobility Impairments: Meniscal and Articular Cartilage Lesions Revision.](#)
- [Evidence-based concepts for prevention of knee and ACL injuries. 2017 guidelines of the ligament committee of the German Knee Society \(DKG\).](#)
- [Evidence-based clinical practice update: practice guidelines for anterior cruciate ligament rehabilitation based on a systematic review and multidisciplinary consensus.](#)
- [The 'Best Practice Guide to Conservative Management of Patellofemoral Pain': Incorporating Level 1 Evidence with Expert Clinical Reasoning.](#)

- [Management of anterior cruciate ligament injuries. Treatment of Osteoarthritis \(OA\) of the knee.](#)
- [Knee pain and mobility impairments: meniscal and articular cartilage lesions.](#)

## FOOT

- [Achilles Pain, Stiffness, and Muscle Power Deficits: Midportion Achilles Tendinopathy Revision 2018.](#)
- [Diagnosis, treatment and prevention of ankle sprains: update of an evidence-based clinical guideline.](#)
- [Heel Pain - Plantar Fasciitis: Revision 2014.](#)
- [Achilles Pain, Stiffness, and Muscle Power Deficits: Achilles Tendinitis.](#)

## Software

*no cal programari specific*