

**COURSE DATA****DATA SUBJECT****Code:** 44641**Name:** Specialised aspects of joint, muscular and tendinous pathology and biomechanics**Cycle:** Master's Degree**ECTS Credits:** 6**Academic year:** 2026-27**STUDY (S)**

Degree	Center	Acad. year	Period
2220 - Master's Degree in Functional Recovery in Physiotherapy	Facultat de Fisioteràpia	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2220 - Master's Degree in Functional Recovery in Physiotherapy	Specialised aspects of joint, muscular and tendinous pathology and biomechanics	ELECTIVES

COORDINATION

BALASCH I BERNAT MERCÈ

SUMMARY

The course includes different aspects of the field of trauma pathology and physiotherapy treatment approach depending on the surgical approach, taking into account the necessary stages to achieve adequate functional recovery.

On the other hand, the fundamentals of biomechanics and locomotor dysfunction incidence that has in the different body structures are included.

PREVIOUS KNOWLEDGE**RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

There are no specified enrollment restrictions with other subjects of the curriculum.



COMPETENCES / LEARNING OUTCOMES

2220 - Master's Degree in Functional Recovery in Physiotherapy

Apply acquired knowledge and develop the ability to solve problems in new or unfamiliar environments within broader or multidisciplinary contexts related to physiotherapy techniques across different levels of healthcare, specifically in the physical treatment of complex pathologies and injuries requiring a higher level of specialization.

Apply anatomy and biomechanics from a clinical perspective.

Be able to correctly apply the various evidence-based methodologies available in the treatment of the pathologies and injuries in question

Being able to obtain and select specific information and relevant sources for problem-solving, strategy development and action plans, advising and implementing different physiotherapy interventions in the areas of functional recovery.

Deepening Knowledge of Clinical Assessment Methods and Systems in Functional Recovery

Develop the ability to perform appropriate clinical reasoning based on reviewed, analyzed, and critically reflected clinical-scientific evidence, with the appropriate level of specialization

Identify and Analyze Risk Factors, Etiology, and Characteristics of Common Pathologies and Injuries in Clinical Settings

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

To delve deeper into the pathophysiology of the most common injuries and diseases.

DESCRIPTION OF CONTENTS

1. PATHOLOGY IN CONDITIONS MUSCULOESQUELÉTICAS

1. Biomechanics of the musculoskeletal and structural dysfunctions related to movement.
2. Pathology of the head, neck, trunk, pelvis and limbs related to dysfunctions of the musculoskeletal system.
3. Traumatic pathology of the rachis, trunk, pelvis and limbs and physiotherapy approach.
4. Fractures. Generalities. Focus of physiotherapy techniques in fracturing processes: pre-consolidation and post-consolidation phases.



WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	12,00
Laboratory	24,00
Total hours	36,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	14,00
Individual or group project	40,00
Independent study and work	0,00
Preparation of lessons	20,00
Preparation for assessment activities	40,00
Resolution of case studies	0,00
Total hours	114,00

TEACHING METHODOLOGY

Theoretical-practical face-to-face lessons in which the contents of the subjects will be worked on, discussed and carried out using different teaching resources.

The individual and collective tutorials should be used as a way to coordinate the students in the individual and tasks in groups.

Study, tasks performance and individual works and other cooperative works, oriented to the preparation of the theoretical-practical lessons, the individual works and works in teams and the oral and written tests that can be performed for the evaluation of the acquisition of the individual knowledge.

EVALUATION

Evaluation system	Percentage of qualifying
Individual work consisting of a literature search work on a subject taught in class, a work about clinical case, activities about case resolution, or a critical work. This will consist of a written part and an oral presentation (80% y 20%, respectively).	20%



Attendance and participation in class, involving the student in the classes. student interaction on questions posed by the teacher, participation in relevant discussions about the information given in class, and participation in activities that promote classroom dynamics taken into account.	50%
Theoretical and practical final test that integrates the knowledge acquired during the course, both with respect to conceptual or procedural content. The examination may be written or oral.	30%

The final mark of the subject will be the weighted sum of the marks obtained in each evaluation test, as long as the student has obtained at least 50% of the maximum mark in each of the tests: individual work, attendance and participation in class and final test (exam). Likewise, with respect to individual work, it will be necessary for the student to pass both parts (written and oral) in order to average with the rest of the tests.

Class attendance is compulsory and is part of the course evaluation. In this sense, a minimum attendance of 80% of the course hours is required to receive the highest grade in this evaluation category. Likewise, except for reasons of force majeure accredited to the master's degree management, a minimum attendance of 50% of the course hours is required to pass this part of the evaluation. Because face-to-face classes are non-recoverable, failing to attend 50% of the hours of the subject means it is impossible to pass the subject in either of the two calls.

REFERENCES

BASIC:

- Brukner P, Khan K. *Clinical Sports Medicine: Medicine of Exercise*. 6th ed. Sydney: McGraw-Hill Education; 2025. ISBN: 9781760427719.
- Gifford L. *Aches and Pains*. Falmouth: CNS Press; 2014. ISBN: 9780953979223.
- Sackett DL, Richardson WS, Rosenberg W, Haynes RB. *Evidence-Based Medicine: How to Practice and Teach EBM*. 2nd ed. New York: Churchill Livingstone; 2005. ISBN: 9780443074448.

COMPLEMENTARY:

- Bogduk N. On the definitions and physiology of back pain, referred pain, and radicular pain. *Pain*. 2009 Dec 15;147(1-3):17-9. doi: 10.1016/j.pain.2009.10.012.



- Di Giacomo G, Pouliart N, Costantini A, De Vita A. *Atlas of Functional Shoulder Anatomy*. Milano: Springer Milan; 2008. ISBN: 9788847007335. doi: 10.1007/978-88-470-0733-5.
- Magnus W, Viswanath O, Viswanathan VK, Mesfin FB. Cervical Radiculopathy. In: *StatPearls [Internet]*. Treasure Island (FL): StatPearls Publishing; 2025. [Disponible en: <https://www.ncbi.nlm.nih.gov/books/NBK441901/>].

Likewise, the books, scientific articles and readings of interest recommended for the preparation of the contents addressed in each topic will be specified at the end of each class.