

**COURSE DATA****Data Subject**

|                      |   |
|----------------------|---|
| <b>Code</b>          | 33008   |
| <b>Name</b>          | Pathology and therapeutic focus on the locomotor system |
| <b>Cycle</b>         | Grade   |
| <b>ECTS Credits</b>  | 6.0   |
| <b>Academic year</b> | 2023 - 2024   |

**Study (s)**

| <b>Degree</b>                  | <b>Center</b>            | <b>Acad. year</b> | <b>Period</b> |
|--------------------------------|--------------------------|-------------------|---------------|
| 1202 - Degree in Physiotherapy | Faculty of Physiotherapy | 2                 | First term    |

**Subject-matter**

| <b>Degree</b>                  | <b>Subject-matter</b>   | <b>Character</b> |
|--------------------------------|---|------------------|
| 1202 - Degree in Physiotherapy | 7 - Medical conditions and surgical conditions and their treatments | Basic Training   |

**Coordination**

| <b>Name</b>              | <b>Department</b>   |
|--------------------------|---------------------|
| HERNANDEZ GUILLEN, DAVID | 191 - Physiotherapy |
| LLACER BOSCH, MARÍA JOSÉ | 191 - Physiotherapy |

**SUMMARY**

Pathophysiology of various diseases of the musculoskeletal system.

- Clinical manifestations of different diseases of the musculoskeletal system.
- Medical and surgical treatments of various diseases of the musculoskeletal system.
- Recognition and evaluation of symptoms of disease.
- Recognition of the time course of the disease



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

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

### Other requirements

Knowledge of Lower Extremity Anatomy and Arthrokinematics is recommended to all applicants.

## OUTCOMES

### 1202 - Degree in Physiotherapy

- Respect fundamental rights and equality between men and women.
- Recognise diversity, multiculturalism, democratic values and peace culture.
- Work in teams.
- Have the ability to organise and plan work.
- Know the general aspects of the endogenous and exogenous aetiology pathology of the locomotor, respiratory, cardiovascular and nervous systems.
- Know the structural, physiologic and functional changes that occur as a consequence of physiotherapy intervention.
- Know how to recognise and assess the symptoms of the diseases.
- Recognise the evolution momentum of the learnt diseases.
- Know the diverse medical and surgical treatments of the studied diseases.
- Promote the participation of the users and their families in the recovering process.

## LEARNING OUTCOMES

The student will know the characteristic features of the pathology of the musculoskeletal system, the time course of the same and medical and surgical treatments applied in each case.

## DESCRIPTION OF CONTENTS

### 0. UNIT 0. Presentation and introduction to the subject



### **1. UNIT 1. Pathology of the different components and tissues of the musculoskeletal system.**

Topic 01. Bone tissue. Structure and composition. Bone injuries, fractures, periostitis. Modeling and remodeling. Bone consolidation process.

Topic 02. Cartilage and other joint tissues. Structure and composition. Traumatic and non-traumatic joint injury mechanisms. Osteoarthritis and arthritis. Recovery process.

Topic 03. The muscle. Structure and composition. Muscular pathology, traumatic and non-traumatic. Recovery of muscle tissue.

Topic 04. The tendon. Structure and composition. Traumatic and non-traumatic tendon injury mechanisms. Recovery in the tendons.

Topic 05. The peripheral nerve. Structure and composition. Peripheral nerve injuries, traumatic and non-traumatic. Nerve recovery process.

Topic 06. Bursas, cysts and ganglions. Structure and composition. Pathological processes.

### **2. UNIT 2: Generalities of musculoskeletal injuries**

Topic 07. Surgical and conservative treatments for injuries to the musculoskeletal system.

Topic 08. Complications after an injury to the musculoskeletal system.

Topic 09. Characteristics of the lesions of the musculoskeletal system in the infant.

Topic 10. Characteristics of injuries to the locomotor system in the elderly. osteoporosis.

### **3. UNIT 3: Pathology of the shoulder joint complex**

Topic 11. Traumatic pathology of the shoulder joint complex.

Topic 12. Non-traumatic pathology of the shoulder joint complex.

### **5. UNIT 5. Pathology of the wrist and hand**

Topic 15. Traumatic pathology of the wrist and hand.

Topic 16. Non-traumatic pathology of the wrist and hand.

### **6. UNIT 6. Pathology of the pelvis and hip**

Topic 17. Traumatic pathology of the pelvis and hip.

Topic 18. Non-traumatic pathology of the pelvis and hip.

### **7. UNIT 7. Pathology of the knee**

Topic 19. Traumatic pathology of the knee.

Topic 20. Non-traumatic pathology of the knee.



## **8. UNIT 8. Pathology of the ankle and foot**

Unit 21. Traumatic pathology of the ankle and foot.

Topic 22. Non-traumatic pathology of the ankle and foot.

## **9. UNIT 9. Pathology of the spine, ribs and skull.**

Topic 23. Traumatic pathology of the spine, ribs and skull.

Topic 24. Alterations in the alignment of the column. Scoliosis, hyperkyphosis, hyperlordosis.

Topic 25. Non-traumatic pathology of the trunk.

## **10. PRACTICAL PART**

Practice 1. Introduction to pathological biomedical imaging, complementary diagnostic methods. Clinical manifestations. Osteosynthesis materials. Introduction to clinical simulation within the subject of Pathology and Therapeutic Approach of the Locomotor Apparatus.

Practice 2. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the upper extremity (I): case study. Preparation of a simulation case on the region of the upper extremity.

Practice 3. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the upper extremity (II): case study. Simulation on clinical cases of the region of the upper extremity.

Practice 4. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the lower extremity (I): case study. Preparation of a simulation case on the region of the lower extremity.

Practice 5. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the lower extremity (II): case study. Simulation on clinical cases of the region of the lower extremity.

Practice 6. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the spine, ribs and skull (I): case study. Preparation of a simulation case on the trunk and head region.

Practice 7. Anatomy, clinic, radiographic diagnosis and conservative and surgical treatment of the spine, ribs and skull (II): case study. Simulation on clinical cases of the trunk and head region.

Practice 8. Clinical simulation practice.

**WORKLOAD**

| ACTIVITY                             | Hours         | % To be attended |
|--------------------------------------|---------------|------------------|
| Theory classes                       | 35,00         | 100              |
| Laboratory practices                 | 25,00         | 100              |
| Development of individual work       | 20,00         | 0                |
| Study and independent work           | 14,00         | 0                |
| Preparation of evaluation activities | 31,00         | 0                |
| Preparing lectures                   | 25,00         | 0                |
| <b>TOTAL</b>                         | <b>150,00</b> |                  |

**TEACHING METHODOLOGY**

The subject consists of a theoretical and practical. During the theoretical sessions will be used a teaching-learning methodology based on the participatory master class. There will also be various group activities.

**“The teaching program can be modified during the course development if the teacher, under the criterion of quality teaching and assimilation of knowledge by the student, considers it appropriate”.**

**EVALUATION**

The evaluation will consist of two blocks: theoretical and practical.

To pass the subject, the sum of the marks of the two blocks will have to be at least half of the maximum possible score of the total of the subject. Additionally, it will be necessary to have at least half the score on both sides so that they can mediate with each other.

Spelling errors will be penalized in any test or written presentation.

**Theoretical block**





The theoretical block will be evaluated by written exam on the day of the official date. The theoretical exam will have a value of 5.5 points on the final grade and will consist of a total of 55 multiple choice questions with four possible response options where the failures subtract successes. Of which 50 will be on the theoretical agenda and 5 on a clinical case raised in the exam.

It will be necessary to have passed this block to pass the subject. That is, the student will have to get at least 2.75 points out of the 5.5 possible in the theoretical exam.

If this block is passed, the note can be saved for the second call, but not for subsequent courses.

The theoretical exam is recoverable. The type of test between calls will not suffer variations.

|                                 |  |     |
|---------------------------------|--|-----|
| Written test<br><br>THEORETICAL | <p>• Multiple choice exam of 55 questions with four possible options: 50 on the theoretical syllabus and 5 on a clinical case</p> <p>• Note= [correct answers – (errors/number of options – 1) x (maximum note / number of questions)]</p> | 55% |
|                                 |  | 55% |

### Practical block

The practical block will be evaluated by the sum of different blocks. The practical exam will have a value of 4.5 points on the final grade, which will be distributed as follows:

- Attendance at practices (0.5 points). This score will be split evenly among the eight practices.
- Development of three clinical cases with the help of radiological imaging through collaborative work (1.5 points). Each of the deliveries will have a value of 0.5 points each.
- Collaborative resolution of clinical cases through a clinical simulation (0.5 points). This part will be evaluated by both the teacher and the rest of the students, each part having a weight of 0.25 points.



- Individual final practical exam (2 points). This test will consist of solving a clinical case through clinical simulation. An evaluation of technical and non-technical skills will be carried out through a rubric.

It is necessary to have passed the practical part of the course in order to pass the subject, that is, to have at least 2.25 points out of the 4.5 possible in the practical exam.

If this block is passed, the note will be saved for the second call. The notes of the different blocks may be saved for the second call of the same course, if deemed appropriate. Both the grade for the practical part and for each of its blocks will not be saved between courses.

The evaluation in the second call of the same course may vary with respect to the first call, as specified below:

- Attendance at practicals: This mark cannot be recovered in the second call.
- Development of three clinical cases: In this case it will not be carried out through collaborative work, but individually.
- Resolution of clinical cases in a collaborative way through a clinical simulation: This note cannot be recovered in the second call.
- Individual practical exam: It will not change with respect to the first call.

|                |   |            |
|----------------|---|------------|
| PRACTICAL part | P Assistance  | 5%         |
|                | P 3 collaborative activities, clinical case development with the help of radiological imaging.  | 15%        |
|                | P Spelling errors Will be penalized   |            |
|                | P Collaborative clinical case resolution  | 5%         |
|                | P Individual practical exam through clinical simulation.<br>Evaluation of competences by rubric | 20%        |
|                |   | <b>45%</b> |



## REFERENCES

### Basic

- Caceres Palou E, Fernández Sabaté A, Fernández Portal L. et al. Manual SECOT de cirugía ortopédica y traumatología. Madrid: Ed. Médica Panamericana. 2003
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- Pérez-Caballer AJ, De Pedro Moro JA. Patología del aparato locomotor en ciencias de la salud. Ed. Panamericana. 2004.
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- Martínez, F. M., & Martínez-Aedo, A. L. U. (2022). Traumatología y Ortopedia para el grado en medicina. Elsevier Health Sciences.

### Additional

- Atkinson K, Coutts F, Hassenkamp AM. Fisioterapia en Ortopedia. Ed. Elsevier. 2006
- Del Amo López R et al. Manual de práctica quirúrgica y traumatólogica en atención primaria. Ed. Semergen.2003
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- Tixà S. Atlas de Anatomía palpatoria. Tomo I: cuello, tronco y miembro superior. Ed Elsevier Masson; 2006





- Tixà S. Atlas de Anatomía palpatoria. Tomo II: Miembro inferior. Ed Elsevier Masson; 2006

