

| Degree        | Type | Year |
|---------------|------|------|
| Physiotherapy | OB   | 3    |

## Contact

Name: Sergi Sureda Sabate

Email: sergi.sureda@uab.cat

## Teachers

Marc Sigüenza Llopart

Eduard Vilar Orellana

## Teaching groups languages

You can view this information at the [end](#) of this document.

## Prerequisites

It is highly recommended to have the knowledge achieved in previous courses about Anatomy and Physiology of the Locomotor System, Fundamentals of Physiotherapy, General Biomechanics and of the spine, Human Pathology and Clinical Evaluation in Physiotherapy of the Locomotor System.

*This subject is part of the set of Physiotherapy subjects in the Pathology of the rachis, an aspect that implies that the student is aware that concepts of Anatomy, Physiology and Biomechanics that have already been given in previous subjects will not be repeated.*

## Objectives and Contextualisation

The subject is programmed in the third year of the Physiotherapy Degree and is part of the group of Physiotherapy subjects. The specific objectives are:

- Generate a therapeutic strategy based on a comprehensive model of intervention in the field of Physiotherapy, based on the integration and unification of both new knowledge and that already given in subjects prior to FPAL III.
- Learn to identify the physiological context in which the patient is, which allows the student to be aware of the patient's possibilities of change.

- To give the student diagnostic clinical evaluation tools, as well as clinical reasoning from a perspective based on scientific evidence.
- Learn the main tools of manual therapy, articular mobilization of the rachis and clinical-orthopedic examination, as well as learn to personalize them in order to be able to propose efficient therapeutic strategies.
- Solve clinical cases susceptible to physiotherapeutic treatment in the field of conditions of the musculoskeletal system, and be able to analyze, adapt and control the results.
- Know the main affects in the field of Traumatology and Rheumatology.

## 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. Solve problems.
28. Use physiotherapy to treat clinical cases involving musculoskeletal system conditions.
29. 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.
30. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.

## Content

The subject focuses on physiotherapy applied to pathologies of the musculoskeletal system, and specifically to pathologies of the spine, both traumatic and degenerative.

The subject is organized with two different parts:

- In the first part, an integrative model of intervention in the field of Physiotherapy is proposed to the student.
- From there, in the second part of the course, the main pathologies of the spine in the field of Traumatology and Rheumatology are presented, and the procedural skills of clinical-orthopaedic examination, based on scientific evidence, are developed.

To understand physiotherapy in spinal pathologies, we will generate a physiological context that will help us understand the peculiarities of the organic state of these patients. We will also learn to observe and explore in such a way that it facilitates the creation of our diagnostic hypotheses and that will lead us to the diagnosis of physiotherapy. Finally, we will learn how to work with the specific treatment tools needed to treat patients with these pathologies. With all this, we will know the pathophysiology of the main dysfunctions and injuries of the spine and pelvis, classified in such a way that allows us to choose the most effective therapeutic tool in each case.

All in all, we will work on the most appropriate methodology when generating our integrative model of physiotherapy treatment, and we will learn to solve clinical cases in an arranged and effective way.

## THEORY

TOPIC 1: INTRODUCTION OF THE SUBJECT AND THERAPEUTIC STRATEGY IN SPINAL PATHOLOGY.

Objectives proposed in the course. Presentation of the program. Types of assessment, seminars, presentation of the teaching staff and bibliography.

Fundamentals of physiotherapy in spinal pathology and concepts of the discipline. Overview of the matter.

1. Overview of the physiological and pathophysiological context.
2. Review and integration of the most important concepts in the anamnesis process, and contextualization in our integrative model of physiotherapy action.
3. General and specificities in the examination of the patient in spinal pathology.
4. Theoretical concepts of manual therapy.
5. Contextualization of manual spinal therapy tools , based on the response they provoke in the patient's body, thus including them within our action model.
6. Generation of the forecast based on the "text-context". Individualization of the expectations of our therapeutic action based both on the resources available to the patient at that time, and on the scientific evidence of the pathology itself.

## TOPIC 2: ANATOMY AND PHYSIOLOGY OF THE SPINE

1. Review of the most important aspects of physiology and anatomy of the spine (unification of the knowledge acquired in previous subjects)
2. Vision of the *spine as a whole*. Vertebral pivots and their relevance in the stability of the organism.
3. Basic notions of Biomechanics applied to the spine.

## TEMA 3: FISIOPATOLOGIA DE LES PRINCIPALS AFECTACIONS DE LACOLUMNA VERTEBRAL.

Within our integrative model, and in order to facilitate the selection of our therapeutic strategy, we will learn to differentiate spinal pathologies based on the organic response that we understand may lie behind the pathological process itself.

We will use the concepts of dysfunction and lesion, as well as the notion of a traumatic or degenerative pathological process, to structure the different spinal pathologies and to develop our therapeutic strategy based on the individual's available resources.

1. Pathophysiology
  1. Resolution of the inflammatory process.
  2. Tissue regeneration.
  3. Mechanical pathologies.
2. Pathologies
  1. Definition
  2. Medical approach.
  3. Concept (Resolution and Nervous System)
    1. Dysfunction
    2. Lesion
  4. Physiotherapy approach
    1. Specific physiotherapy techniques
    2. Lifestyle influencing factors

## PRACTICAL WORK

We will perform diagnostic procedures used in the diagnosis and physiotherapy treatment of spinal pathologies.

1. Functional assessment and therapeutic approach of the lumbar region
  1. Palpation of the main structures
  2. Clinical and diagnostic assessment tools
  3. Main mobilization and treatment tools for the principal conditions of the lumbar region.
2. Functional assessment and therapeutic approach of the dorsal region
  1. Palpation of the main structures
  2. Clinical and diagnostic assessment tools
  3. Main mobilization and treatment tools for the principal conditions of the dorsal region.

3. Functional assessment and therapeutic approach of the cervical region
  1. Palpation of the main structures
  2. Clinical and diagnostic assessment tools
  3. Main mobilization and treatment tools for the principal conditions of the cervical region.
4. Functional assessment and therapeutic approach of the pelvic region
  1. Palpation of the main structures
  2. Clinical and diagnostic assessment tools
  3. Main mobilization and treatment tools for the principal conditions of the pelvis.

## Activities and Methodology

| Title                                 | Hours | ECTS | Learning Outcomes   |
|---------------------------------------|-------|------|---|
| Type: Directed                        |       |      |   |
| LABORATORY PRACTICALS (PLAB)          | 15    | 0.6  | 2, 3, 4, 8, 9, 10, 11, 13, 12, 15, 16, 19, 22, 24, 14, 28, 27         |
| THEORY (TE)                           | 30    | 1.2  | 2, 3, 4, 8, 9, 10, 11, 13, 12, 16, 19, 18, 22, 24, 23, 25, 14, 28, 27 |
| Type: Autonomous                      |       |      |   |
| READING ARTICLES /REPORTS OF INTEREST | 17    | 0.68 | 8, 9, 10, 11, 12, 15, 16, 22, 28                                      |
| Research and information treatment    | 20    | 0.8  | 2, 17, 24, 23, 14, 27   |
| SELF-STUDY                            | 40    | 1.6  | 2, 3, 4, 8, 9, 11, 13, 15, 16, 19, 22, 24, 23, 14, 28                 |
| works delivery                        | 25    | 1    | 2, 1, 3, 4, 8, 9, 10, 11, 13, 12, 15, 16, 17, 19, 18, 22, 14, 28      |

## T

Teaching is based on: theoretical lectures (which may include practical demonstrations in the classroom itself and for which the collaboration of a student will be required), and practical classes (which will be held in the laboratory classrooms).

A research project will also have to be carried out in a group of students and that will be related to a pathology of the musculoskeletal system.

The USE of MOBILE PHONES, SMARTWATCHES, HEADPHONES or other ELECTRONIC DEVICES is NOT allowed during the exams. The PLAB dossiers must be printed on paper.

It is NOT allowed to take PHOTOGRAPHS OR RECORDINGS during CLASSES. All material is subject to copyright and will be posted on the virtual campus. Doing business with the material posted on the virtual campus will automatically imply suspending the subject and it will be the decision of the lecturer if he or she takes legal action against the student through the UAB's legal services.

ATTENDANCE AT THE PLAB IS MANDATORY.

Access to the classroom for laboratory practices will not be allowed after 10 minutes from the start of the class, and it will be counted as unjustified lack of attendance.

It is MANDATORY to attend the PLAB with the appropriate clothing (bikini (or sports shorts), throughout all practical classes of the course.

It will NOT be allowed to carry out the PLABs with watches, rings, bracelets, earrings... or any other element that may be detrimental to the comfort and safety of students during the execution of physiotherapy maneuvers. The student must attend the PLAB with their hair up and their nails short.

An INAPPROPRIATE BEHAVIOUR of the student during classes, which may be a nuisance to the teacher or other students, gives the teacher the right to expel the student from the classroom. Each expulsion will be treated as an unjustified absence of attendance and 0.5 points will be deducted from the final grade.

You can NOT EAT OR DRINK during classes.

Note: 15 minutes of a class will be reserved, within the calendar established by the center/degree, for students to complete the surveys for the evaluation of the performance of the teaching staff and the evaluation of the subject/module.

This subject is based on a theoretical-practical teaching.

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.

## Assessment

### Continuous Assessment Activities

| Title   | Weighting | Hours | ECTS | Learning Outcomes   |
|---|-----------|-------|------|---|
| clinical case   | 25%       | 1     | 0.04 | 7, 2, 3, 4, 5, 8, 10, 13, 12, 16, 17, 21, 20, 18, 24, 30, 23, 26, 14, 27, 6, 29                           |
| Narrative records   | 10%       | 0     | 0    | 4, 8, 9, 10, 11, 13, 12, 15, 16, 22, 24, 28, 27   |
| Practical evaluation  | 35%       | 1     | 0.04 | 2, 3, 4, 8, 9, 11, 13, 19, 22, 24, 23, 27   |
| Written assessments with objective tests: multiple choice tests | 30%       | 1     | 0.04 | 7, 2, 1, 3, 4, 5, 8, 9, 10, 11, 13, 12, 15, 16, 17, 19, 21, 20, 18, 22, 24, 30, 23, 25, 26, 14, 27, 6, 29 |

Single Assessment:

This course does not include a single assessment option.

The FINAL evaluation of the course will consist of:

- Final exam: (55% of the final grade):

Multiple-choice exam on the content covered in the theoretical classes (30% of the final grade). This test will consist of 40 multiple-choice questions, each with four answer options (only one of which is correct). Incorrect answers will subtract 0.33 from the final grade. Unanswered questions will not deduct points. Minimum passing grade: 5.

Resolution of a clinical case (25% of the final grade): to be carried out on the same day as the multiple-choice exam. The student must set objectives for each section of the physiotherapy treatment, define therapeutic hypotheses, propose exploratory tools to reach a functional physiotherapy diagnosis, present a coherent treatment plan (initially proposing the objectives and the steps to achieve them), and finally, generate a prognosis based on the specific characteristics of the pathology and the patient profile. Minimum passing grade: 5.

- Final practical exam: (35% of the final grade).

A practical exam will be conducted using an objective structured clinical evaluation. The student must apply clinical reasoning, answer all the questions of the teacher during the exam and perform some of the exploratory and/or therapeutic physiotherapy techniques discussed in seminars and theoretical classes. Minimum passing grade: 5

- Scientific project and attendance (15% of the final grade)

Group research project. Minimum passing grade is 5.

The percentage of each part in the final grade will be: 55% final exam grade (30% test + 25% clinical case), 35% final practical exam grade (practical and/or practical test), and 15% continuous assessment (research project).

To apply these percentages, it is essential to obtain a minimum score of 5.00 on the multiple-choice exam, the clinical case, the practical exam, and the research project.

The following are considered criteria for assigning the NOT ASSESSED grade:

Students who do not complete either the theoretical or practical assessments, thereby exhausting their course enrollment rights, will be considered "Not Assessed".

Scoring 0.00 in any of the assessable components (final exam, practical exam, or research project)

Missing more than 20% of practical classes (PLAB)

Class attendance:

- Theoretical classes. Although not mandatory, attendance is highly recommended as key demonstrations of techniques and group dynamics may take place, which are important for following the course effectively.

- Practical classes. Attendance is 100% mandatory. Absences will only be justified for medical reasons (with proper documentation), provided that they do not exceed 20% of the total classes. Otherwise, the student will be considered NOT ASSESSED. Each unjustified absence will subtract 0.5 points from the final grade of the course.

The final course grade will be expressed numerically (with two decimal points) on a scale from 0 to 10, with the qualitative equivalence, according to UAB criteria, of: fail, pass, good, excellent (with the possibility of obtaining Honors Distinction).

The procedure for reviewing exams will follow the current UAB regulations and, in all cases, must be requested individually and in writing within the established deadlines.

Students who have not passed the course/module using the previously described evaluation methods may take a final or remedial exam. In the case of failing one of the mandatory tests, a recovery or synthesis exam with the same structure as the failed test may be taken. Minimum passing grade: 5. The maximum score a student can obtain on this exam is also 5.

## Bibliography

- Douglas G, Nicol F, Robertson. Macleod. Exploración Clínica+ StudentConsult en español. 13th Edition. Barcelona: Elsevier; 2014.
- Hoppenfeld, RS. *Exploración física de la columna vertebral y las extremidades*. Ed. El Manual Moderno. 1979.
- Cleland J, Koppenhaver S, Su J. Netter. Exploración Clínica en Ortopedia. Un enfoque basado en la evidencia. 3a Edición. Barcelona: Elsevier Masson; 2006.
- Palmer L, Epler ME. Fundamentos de las técnicas de evaluación musculoesquelética. Barcelona: Paidotribo; 2003.
- Clarkson HM. Musculoskeletal Assessment. 3th edition. LWW; 2012.
- Brotzman SB, Mnaske RC. Rehabilitación Ortopédica Clínica. Un enfoque basado en la evidencia. 4a Edición. Barcelona: Elsevier; 2018.
- Parsons J, Marcer N. *Osteopatía. Modelos de diagnóstico, tratamiento y práctica*. Ed. Elsevier 2007
- Perry, Clayton R. *Manual de fracturas*. 2ª ed. Ed. McGrawHill. 2001.
- Magee D. Orthopedic Physical Assessment (Musculoskeletal Rehabilitation). 6th Ed. Elsevier; 2014.
- Heimann, D. Compendio de Terapia Manual. Barcelona: Paidotribo; 2007.
- Kaltenborn FM. Fisioterapia manual columna. Madrid: Mc Graw-Hill Interamericana; 2000.
- Vilar Orellana E, Sureda Sabaté S. *Fisioterapia del aparato locomotor*. Ed. McGraw-Hill, Interamericana de España; 2005.
- Craig Liebenson. *Manual de Rehabilitación de la columna vertebral*. Ed. Paidotribo. 1999.
- George V. Lawry. *Systematic musculoskeletal examination*. Ed. McGraw-Hill. 2011.
- Karen S. Rucker, Andrew J. Cole, Stuart M. Weinstein. Dolor Lumbar. *Enfoque del diagnóstico y el tratamiento basado en los síntomas*. Ed. McGraw-Hill. 2003.
- Haaner-Becker R, Schoer D. *Manual de técnicas de fisioterapia. Aplicación en traumatología y ortopedia*. Ed. Paidotribo; 2001.
- Travel y Simons. *Dolor y disfunción miofascial*. 2ª Edición. Ed. Medica Panamericana, 2002
- Buckup J, Hoffmann R. *Pruebas clínicas para patología ósea, articular y muscular. Exploraciones, signos y síntomas*. Ed. Elsevier. 2019.

## Software

No specific software required

## Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

| Name                          | Group | Language        | Semester        | Turn      |
|-------------------------------|-------|-----------------|-----------------|-----------|
| (PLAB) Practical laboratories | 201   | Catalan/Spanish | second semester | afternoon |
| (PLAB) Practical laboratories | 202   | Catalan         | second semester | afternoon |
| (PLAB) Practical laboratories | 203   | Catalan         | second semester | afternoon |
| (TE) Theory                   | 201   | Catalan         | second semester | afternoon |