# Information about the subject

**Degree:** Bachelor of Science Degree in Physiotherapy

**Faculty:** Faculty of Medicine and Health Sciences

**Code:** 240208 **Name:** Physiotherapy of the Locomotive System I

**Credits:** 6,00 **ECTS Year:** 2 **Semester:** 2

**Module:** MODULE 2: SPECIFIC

**Subject Matter:** Specific Methods of Intervention in Physical Therapy **Type:** Compulsory

**Field of knowledge:** Health Sciences

**Department:** Physiotherapy

**Type of learning:** Classroom-based learning

**Languages in which it is taught:** English, Spanish

**Lecturer/-s:**

| | | |
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# Module organization

## MODULE 2: SPECIFIC

| Subject Matter | ECTS | Subject | ECTS | Year/semester |
|---|---|---|---|---|
| Fundamentals of Physical Therapy | 6,00 | Fundamentals of Physiotherapy | 6,00 | 1/1 |
| Assessment in Physiotherapy | 6,00 | Assessment in Physiotherapy | 6,00 | 1/2 |
| General Procedures for Intervention in Physiotherapy | 12,00 | General Procedures of Intervention I | 6,00 | 2/1 |
| | | General Procedures of Intervention II | 6,00 | 2/2 |
| Physiotherapy in clinical specialties | 6,00 | Medical-Surgical Conditions and their Treatments | 6,00 | 2/2 |
| Specific Methods of Intervention in Physical Therapy | 30,00 | Cardiocirculary and Respiratory Physiotherapy | 6,00 | 3/1 |
| | | Physiotherapy of the Locomotive System I | 6,00 | 2/2 |
| | | Physiotherapy of the Locomotive system II | 6,00 | 3/1 |
| | | Physiotherapy of the Nervous System | 6,00 | 2/2 |
| | | Sports Physiotherapy | 6,00 | 3/1 |
| Kinesitherapy | 6,00 | Kinesitherapy | 6,00 | 2/1 |
| Legislation, Public Health and Health Administration | 12,00 | Community Physiotherapy and Public Health | 6,00 | 3/1 |

| | | | |
|---|---|---|---|
| Legislation, Public Health and Health Administration | Social Morality. Ethics | 6,00 | 4/1 |

## Recommended knowledge

Has not established

## Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

| | |
|---|---|
| R1 | The student is able to carry out an analysis and synthesise a topic related to health science and present it orally and in writing. |
| R2 | The student is able to carry out a physiotherapy interaction plan in physiotherapy in pathologies and dysfunctions of the locomotor apparatus, formulating objectives according to the needs and available means. |
| R3 | The student evaluates the evolution of the results obtained with physiotherapy treatment in relation to the objectives set. |
| R4 | The student knows the physiological changes that occur with the application of physiotherapeutic techniques of the locomotor apparatus. |
| R5 | The student applies and argues with skill different physiotherapeutic techniques of assessment and diagnosis in pathologies and dysfunctions of the locomotor system. |
| R6 | The student applies and argues with skill different physiotherapeutic treatment techniques in pathologies and dysfunctions of the locomotor system. |
| R7 | The student conducts bibliographic research from different sources and knows how to analyse it with a critical and constructive spirit. |
| R8 | The student knows the basic principles of traumatological, rheumatological and orthopaedic pathology of the spine and skull. |
| R9 | The students apply rational criteria on the basis of their work. |
| R10 | Students communicate coherently the basic knowledge of physiotherapy of the locomotor apparatus. |
| R11 | Incorporate the ethical and legal principles of the profession into professional practice, as well as integrating social and community aspects into decision-making. |

## Competencies

**Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):**

| BASIC | | Weighting | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| CB1 | Students demonstrate knowledge and understanding in an area of study that is at the core of general secondary education, and is often at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study. | x | | | |
| CB2 | Students know how to apply their knowledge to their work or vocation in a professional way and possess the skills usually demonstrated by developing and defending arguments and solving problems within their area of study. | | | x | |
| CB3 | Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues. | | | | x |
| CB4 | Students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences. | | | x | |
| CB5 | Students develop those learning skills necessary to undertake further studies with a high degree of autonomy. | | | x | |

| SPECIFIC | | Weighting | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| CE1 | Students learn human anatomy and physiology, highlighting the dynamic relations between structure and function, especially of the locomotive system and the nervous and cardio-respiratory systems. | | | x | |
| CE2 | Students identify the physiological and structural changes that can occur as a result of the application of physiotherapy. | | | | x |
| CE8 | The psychological and social factors that influence the health/disease status of the individual, family and community. | | x | | |

| | | | | | |
|---|---|---|---|---|---|
| CE9 | Students assimilate theories of communication and interpersonal skills. | x | | | |
| CE12 | The general aspects of pathology of endogenous and exogenous etiology related to physiotherapy of all devices and systems with their medical, surgical, physiotherapeutic and orthopedic treatments. | | x | | |
| CE13 | The structural, physiological, functional and behavioral changes that occur as a result of the intervention of physiotherapy. | | | | x |
| CE14 | Students identify the theoretical bases of Physiotherapy as a science and profession. The models of action in Physiotherapy. The theoretical bases of the assessments, tests and functional verifications: knowledge of their modalities and techniques as well as the scientific evaluation of their utility and effectiveness. The diagnosis of Physiotherapy. Methodology of the research applied to Physiotherapy. | | | x | |
| CE15 | General physiotherapeutic procedures: Kinesitherapy, Massage and Massage Therapy, Electrotherapy, Magnetic Therapy, Ergotherapy, Hydrotherapy, Balneotherapy, Climatotherapy, Thalassotherapy; Thermotherapy, Cryotherapy, Vibrotherapy, Phototherapy, Pressotherapy, and the derivatives of other physical agents | | x | | |
| CE16 | Physiotherapeutic Procedures based on specific Methods and Techniques of physiotherapeutic actions to be applied in the different pathologies of all the apparatuses and systems, and in all the specialties of Medicine and Surgery, as well as in the promotion and conservation of the health, and in the prevention of the disease. | | | | x |
| CE21 | Students give proof of the criteria and indicators that guarantee the quality in the provision of the physiotherapy service, through the use of good clinical practice guidelines and professional standards. | | | x | |
| CE28 | Students prepare and systematically fill in the complete Physiotherapy Clinical History, where all the steps followed from the reception of the patient/user to the report at the discharge of Physiotherapy are properly and efficiently recorded. | | | x | |
| CE29 | Students assess the functional state of the patient/user, considering the physical, psychological and social aspects. | | | | x |
| CE30 | Students determine the Physiotherapy Diagnosis according to the internationally recognized standards and international validation instruments. This competency includes prioritizing the needs of the patient/user to attend with priority to those that most compromise the recovery process. | | | x | |

| | | | | | |
|---|---|---|---|---|---|
| CE31 | Students know how to design the Physiotherapy Intervention Plan. To elaborate a specific Physiotherapy Intervention Plan using problem-solving skills and clinical reasoning: in line with the available resources; formulating the intervention objectives with the user and, if appropriate, with the significant people in his environment, collecting his expectations regarding care; selecting the protocols or procedures most appropriate to the planned care, attending to criteria of appropriateness, validity and efficiency. | | | | x |
| CE41 | Students keep the foundations of the knowledge, skills and attitudes of the professional competences updated, through a process of continuous training (throughout life); to critically analyse the methods, protocols and treatments of the care in Physiotherapy and to ensure that they are adapted to the evolution of scientific knowledge. | | x | | |
| CE47 | Students maintain an attitude of learning and improvement. This includes expressing interest and acting in a constant search for information and professional improvement, committing to contribute to professional development in order to improve practice competence and maintain the status that corresponds to a qualified and regulated profession. | | | | x |
| CE51 | Show respect, appreciation and sensitivity to the work of others. | | | x | |
| CE52 | Develop the ability to organize and lead work teams effectively and efficiently. | | x | | |
| CE55 | Show its orientation towards the patient/user, making it clear in its actions that the citizen and his/her needs are the axis around which its decisions revolve. As can be seen, some of the competencies that we have gathered as specific coincide in their denomination and contents with certain transversal competencies, but we have decided to incorporate them as specific competencies, given the extraordinary importance that national and international Professional Associations and Colleges confer on them | | | | x |

| TRANSVERSAL | | Weighting | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| CT1 | Decision-making | | x | | |
| CT2 | Problem solving. | | | x | |

| | | | | |
|---|---|---|---|---|
| CT3 | Capacity for organization and planning. | | x | |
| CT4 | Analysis and synthesis capacity. | | x | |
| CT5 | Oral and written communication in the native language. | | x | |
| CT6 | Information management capacity. | | x | |
| CT7 | Computer skills related to the field of study. | x | | |
| CT8 | Knowledge of a foreign language. | x | | |
| CT9 | Ethical commitment. | x | | |
| CT10 | Teamwork. | | x | |
| CT11 | Interpersonal relationship skills. | x | | |
| CT12 | Work in an interdisciplinary team | x | | |
| CT13 | Critical Reasoning | | | x |
| CT14 | Work in an international context. | | | |
| CT15 | Recognition of diversity and multiculturalism | | | |
| CT16 | Motivation for quality | | | x |
| CT17 | Adaptation to new situations. | x | | |
| CT18 | Creativity | | x | |
| CT19 | Autonomous learning | | | x |
| CT20 | Initiative and entrepreneurship | x | | |
| CT21 | Leadership. | x | | |
| CT22 | Knowledge of other cultures and customs | | | |

| | | | | |
|---|---|---|---|---|
| CT23 | Sensitivity to environmental issues. | x | | |

## Assessment system for the acquisition of competencies and grading system

| Assessed learning outcomes | Granted percentage | Assessment method |
|---|---|---|
| R1, R2, R3, R4, R5, R6, R7, R10, R11 | 20,00% | OPEN QUESTIONS: Written exam in which theoretical knowledge and the student's ability to relate, integrate and express it coherently in written language are evaluated. It allows the following generic or transversal skills to be assessed: 4 Capacity for analysis and synthesis. 3 Capacity for organisation and planning. 5 Oral and written communication in the native language. 8 Knowledge of a foreign language. 2 Problem-solving 19 Autonomous learning. |
| R1, R2, R3, R4, R5, R6, R7, R10, R11 | 30,00% | TEST TYPE: Multiple choice test with one correct answer out of five possible ones. It allows the student to know in greater detail the contents acquired by him/her. It allows the following generic or transversal competences to be assessed: 2 Problem solving 1 Decision making 13 Critical thinking |
| R1, R2, R3, R4, R5, R6, R7, R10, R11 | 10,00% | PRACTICES: Oral test in which the student is asked to solve practical exercises, clinical cases or problems about the knowledge of the different subjects. It assesses the following generic or transversal competences: 4 Analysis and synthesis capacity. 3 Capacity for organisation and planning. 7 IT Knowledge. 6 Information management skills. 2 Problem-solving 1 Decision-making. 13 Critical thinking. 19 Self-directed learning. |

| | | |
|---|---|---|
| R1, R2, R5, R6, R7, R9, R10, R11 | 0,00% | WORKS: The student, individually or in a group, elaborates a revision or research topic and presents it, in writing, for the evaluation by the teacher. The following generic or transversal competences are valued: 4 Capacity for analysis and synthesis. 3 Capacity for organisation and planning. 7 Computer skills. 6 Information management skills. 10 Teamwork. 14 Working in an international context. 11 Interpersonal skills. 13 Critical thinking. 19 Autonomous learning. 18 Creativity. 21 Leadership. 20 Initiative and entrepreneurship. 16 Motivation for Quality. 70 Maintaining an attitude of learning and improvement. 72 Knowing one's own skills and limitations. |
| R1, R2, R3, R4, R5, R6, R7, R10, R11 | 30,00% | PRACTICAL EXAM: The student is faced with a test in which s/he must demonstrate through practical application the acquisition of certain knowledge. For example, histological or anatomopathological diagnosis, image interpretation or diagnostic tests. This test evaluates the following generic or transversal skills: 13 Critical reasoning. 19 Autonomous learning. |
| R1, R2, R3, R4, R5, R6, R7, R10, R11 | 10,00% | PRESENTATION: The student develops, through an oral presentation, supported or not by audiovisual means, a subject or work commissioned by the teacher. This is the method of evaluation of the Final Degree's Project. At the end of the presentation, the teacher or the audience can ask questions. |
| | 0,00% | ATTENDANCE AND PARTICIPATION IN CLASS: The teacher evaluates the participation, involvement and progression of the student's acquisition of knowledge and skills during the theoretical and practical classes. It will not exceed 5% of the final grade. |

**Observations**

1. THEORETICAL WRITTEN TEST (50%)
Test type (30%) It will have 40 multiple response questions (test type) with 5 alternative answers of which only one will be correct. Errors will be penalized as follows (CORRECT ANSWERS = correct answers – (errors/4).Open questions (20%) The test will have 4 questions to be developed by the student about the topics presented in the subject

**These tests must be passed separately with at least a 5 for it to be weighted.**
ONLY THOSE STUDENTS WHO HAVE PASSED THE THEORETICAL EXAM WITH A GRADE OF 5 OR MORE WILL BE ABLE TO ACCESS THE PRACTICAL EXAM.
2. PRACTICAL TEST (40%)
The practical test will consist of 2-3 assumptions related to the practices of the subjectOral test in which the student is asked to solve practical exercises, clinical cases or problems regarding the knowledge of the subject (10%)
3. GROUP WORK (10%)
Presentation of the work 10% The student develops a topic or work related to the subject through an oral presentation, supported by audiovisual means.

**MENTION OF DISTINCTION:**
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

## Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

| | |
|---|---|
| M1 | Master class Problem solving Exposition of contents by the teacher. Explanation of knowledge and skills |
| M2 | Case resolution: Analysis of sample realities - real or simulated - that allow the student to connect theory with practice, to learn from models of reality or to reflect on the processes used in the cases presented. |
| M4 | Personalized attention. Period of instruction and/or guidance by a tutor with the aim of analyzing with the student their work, activities and their evolution in learning the subjects. |
| M5 | Set of tests carried out to know the degree of acquisition of knowledge and skills of the student. |

M11 Oral presentation

M12 Group work: Group work sessions supervised by the teacher. Knowledge construction through student interaction and activity.

M14 Group work to search, discuss and filter information about the subjects

M15 Seminar, supervised monographic sessions with shared participation

M16 Student's study: Individual preparation of readings, essays, problem solving, seminars.

## IN-CLASS LEARNING ACTIVITIES

| | LEARNING OUTCOMES | HOURS | ECTS |
|---|---|---|---|
| Theoretical lessons<br>M1 | R1, R2, R3, R4, R5, R6, R7, R10, R11 | 32,00 | 1,28 |
| Practice lessons<br>M2 | R1, R2, R6, R7, R10, R11 | 14,00 | 0,56 |
| Seminar<br>M12, M14, M15 | R6, R7 | 6,00 | 0,24 |
| Office Hours<br>M4 | R1 | 5,00 | 0,20 |
| Assessment<br>M2, M5 | R1, R2, R3, R4, R5, R6, R7, R10, R11 | 3,00 | 0,12 |
| **TOTAL** | | **60,00** | **2,40** |

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

| | LEARNING OUTCOMES | HOURS | ECTS |
|---|---|---|---|
| Autonomous work<br>M16 | R1, R2, R3, R4, R5, R6, R7, R10, R11 | 80,00 | 3,20 |
| Group work<br>M12, M14 | R1, R2, R3, R4, R5, R6, R7, R10, R11 | 10,00 | 0,40 |
| **TOTAL** | | **90,00** | **3,60** |

## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

| Content block | Contents |
|---|---|
| Cervical Spine | 1.- UNIT 1.- Cervical Spine. Anatomical and biomechanical memory. Traumatological and rheumatological pathology. Physiotherapy treatment techniques.<br>2- UNIT 2.- Cervicalgia. Classification and techniques of physiotherapy treatment.<br>3.- UNIT 3.- The whiplash, Whiplash. Physiotherapy treatment techniques. Review of the scientific literature |
| Dorsal Spine | UNIT 4.- Dorsal Spine. Anatomical and biomechanical memory. Traumatological, rheumatological and orthopedic pathology. Physiotherapy treatment techniques |
| Lumbar Spine | 5.- UNIT 5- Lumbar Spine. Anatomical and biomechanical memory. Traumatological, rheumatological and orthopedic pathology. Physiotherapy treatment techniques.<br>6.- UNIT 6.- Low back pain. Physiotherapy treatment techniques. Review of the scientific literature. |
| Sacral-Iliac Articulation | UNIT 7.- Sacral-Iliac Articulation. Anatomical and biomechanical memory. Traumatological and orthopedic pathology. Physiotherapy treatment techniques |
| MANDIBULAR TEMPORARY JOINT (TMJ) | MANDIBULAR TEMPORARY JOINT (TMJ) UNIT 8- Temporo-Mandibular Joint (TMJ). Anatomical and biomechanical memory. Traumatological, rheumatological and orthopedic pathology. Physiotherapy treatment techniques. |
| SCOLIOSIS | UNIT 9.- Scoliosis. Conservative, surgical and post-surgical evaluation and treatment |

| | |
|---|---|
| Ankylosing spondylitis. | UNIT 10.- Ankylosing spondylitis. Assessment and treatment |
| Compressive syndromes | UNIT 11.- Compressive syndromes. Radiculopathies. Assessment and treatment. |
| MYOFASCIAL PAIN SYNDROME | UNIT 12.- Myofascial pain syndrome. Introduction and concepts. |
| MYOFASCIAL PAIN SYNDROME II | UNIT 13.- Myofascial pain syndrome in the spine. Theoretical-practical seminar |
| CLINICAL CASES | Traumatological, rheumatological and orthopedic pathology of the spine. Planning / Objectives and treatment |
| ORAL EXHIBITION GROUP WORKS | Oral Exhibition by groups |
| ASSESSMENT AND TREATMENT RACHIS CERVICAL, PX | Joint assessment and treatment. Muscle evaluation and treatment |
| ASSESSMENT AND TREATMENT DORSAL RACHIS, PX | Joint evaluation and treatment. Muscle evaluation and treatment. |
| ASSESSMENT AND TREATMENT RACHIS LUMBAR, PX | Joint evaluation and treatment. Muscle evaluation and treatment. |
| SACRO-ILIACA JOINT, PX | ASSESSMENT AND TREATMENT OF ART. SACRO-ILÍACA |
| ATM,PX | ASSESSMENT AND TREATMENT IN ATM. Joint evaluation and treatment. Muscle evaluation and treatment. |

Temporary organization of learning:

| Block of content | Number of sessions | Hours |
|---|---|---|
| Cervical Spine | 3,00 | 6,00 |
| Dorsal Spine | 1,00 | 2,00 |
| Lumbar Spine | 3,00 | 6,00 |
| Sacral-Iliac Articulation | 2,00 | 4,00 |
| MANDIBULAR TEMPORARY JOINT (TMJ) | 1,00 | 2,00 |
| SCOLIOSIS | 2,00 | 4,00 |
| Ankylosing spondylitis. | 1,00 | 2,00 |
| Compressive syndromes | 1,00 | 2,00 |
| MYOFASCIAL PAIN SYNDROME | 1,00 | 2,00 |
| MYOFASCIAL PAIN SYNDROME II | 1,00 | 2,00 |
| CLINICAL CASES | 4,00 | 8,00 |
| ORAL EXHIBITION GROUP WORKS | 3,00 | 6,00 |
| ASSESSMENT AND TREATMENT RACHIS CERVICAL, PX | 3,00 | 6,00 |
| ASSESSMENT AND TREATMENT DORSAL RACHIS, PX | 1,00 | 2,00 |

| | | |
|---|---|---|
| ASSESSMENT AND TREATMENT RACHIS LUMBAR, PX | 1,00 | 2,00 |
| SACRO-ILIACA JOINT, PX | 1,00 | 2,00 |
| ATM,PX | 1,00 | 2,00 |

## References

- Vilar E, Sureda, S. Physiotherapy of the Locomotor System. Mc Graw-Hill-Interamericana. Madrid, 2005. - Reichel HS. Ploke CE. Physiotherapy of the Locomotor System. Paidotribo. Barcelona. 2007. - Busquet L. Muscle chains I, II, III and IV. Paidotribo. 2004. - Chaitow L. Clinical application of neuromuscular techniques I and II. Paidotribo 2005. - Souchard PE. RPG: Principles of global postural reeducation. Paidotribo. 2010 - Chaitow L. Muscle energy techniques. Paidotribo. 2010 - Souchard PE. Active global stretching I and II. Paidotribo. 2000. - Greenman PE. Principles and practice of manual medicine. 3rd Ed. Panamericana. 2005. - Xhardez Y.: Vademecum of Kinesioterapia. Ed. The Athenaeum. Barcelona. 2001 - Mora E. Rehabilitation and physiotherapy approach in rheumatic disorders. Ed .: Medical Classroom - Hoppenfield S. Physical Assessment of the spine and extremities. Modern Manual 1980. - Ricard F. Osteopathic treatment of low back pain and sciatica. Pan American 2000. - Huter-Becker A, Schewe H. Physiotherapy description of techniques and treatment. Paidotribo 2003. - Neiger H. Functional bandages. Masson 1994. - Snault M. Analytical stretching in active physiotherapy. Masson 1994. - Travell DG, Simons JG. Pain and myofascial dysfunction Volumes 1 and 2. Panamericana 2003. - Kendall FP. Muscles, tests, functions and postural pain. Marban. 2000 - Netter FH. ATLAS OF HUMAN ANATOMY Elsevier Masson. 2007 - Kaltenborn, F. M. Manual physiotherapy: Column. Mc Graw Interamericana. 2004 - Kaltenborn FM. Manual mobilization of the joints of the extremities. Mc Graw Interamericana. 2001 - Hall JE. Guyton and Hall Treatise on Medical Physiology. Elsevier 2011. - Bienfait M. Physiological bases of manual therapy and osteopathy. Paidotribo. 200