1. BASIC DATA

Subject	ORTHOPEDIC MANUAL THERAPY II. APPLICATIONS AND NEURPHYSIOLOGICAL EFFECTS OF MANUAL THERAPY
Titration	BACHELOR'S DEGREE IN PHYSIOTHERAPY
School/ Faculty	PHYSICAL ACTIVITY SCIENCES, SPORTS AND PHYSIOTHERAPY
Course	2024-2025
ECTS	6 ETCS (150 HOURS)
Character	OPTIONAL
Language/s	SPANISH AND ENGLISH
Modality	FACE
Semester	S1
Academic year	2024-2025
Coordinating Teacher	ALBERTO CARLOS MUÑOZ FERNÁNDEZ
Teacher	

2. PRESENTATION

"Orthopaedic Manual Therapy II: Application and neurophysiological effects of manual therapy" is part of the Manual Therapy itinerary, which offers students three optional subjects with a common thematic core.

This is the second subject of the optional line, which is taught in the third year of the degree, focusing on the neurophysiological effects of Manual Therapy, which supports its application in neuromusculoskeletal problems.

3. COMPETENCIES AND LEARNING OUTCOMES

Core competencies:

- CB2: Students must know how to apply their knowledge to their work or vocation in a professional way and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.
- CB3: Students must have the ability to gather and interpret relevant data (usually within their area of study) in order to make judgments that include reflection on relevant social, scientific or ethical issues.
- CB4: Students should be able to transmit information, ideas, problems and solutions to both a specialised and non-specialised audience.
- CB5: Students must have developed those learning skills necessary to undertake further studies with a high degree of autonomy

Transversal competences:

- TC 3: Organizational and Planning Capacity.
- TC 4: Ability to analyze and synthesize: Analysis is the method of reasoning that allows complex situations to be broken down into their constituent parts; it also allows other alternatives and perspectives to be evaluated with the aim of finding optimal solutions; Synthesis seeks to reduce complexity in the sense of improving understanding and/or solving problems.
- TC 6: Information Management Capacity
- TC 9: Ethical commitment
- TC 12: Working in a multidisciplinary team
- CT13: Critical reasoning.

Specific competencies:

- CE 1: Ability to measure the patient's condition.
- CE 2: Ability to design interventions or pain treatment in Physiotherapy.
- CE 3: Ability to determine the physiotherapy diagnosis.
- CE 4: Ability to offer comprehensive and effective therapeutic care.
- CE 7: Ability to execute, direct and coordinate the physiotherapy intervention plan.
- CE 9: Ability to apply quality assurance mechanism in the practice of physiotherapy, in accordance with recognised validation criteria.
- CE 10: Ability to intervene in health promotion and disease prevention.
- CE 20: Ability to maintain an attitude of learning and improvement.
- CE 27: Ability to work responsibly.

Learning outcomes:

- RA1: Understanding of the fundamental contents related to the contents of the subject.
- RA2: Understanding of the basic principles and methodology of the different clinical approaches from scientific evidence.
- RA3: Ability to assess the neurophysiological effects of manual therapy on the central and peripheral nervous system.
- RA4: Ability to assess the neurophysiological effects of manual therapy on myofascial trigger points.
- RA5: Ability to assess the spinal cord and motor effects of manual therapy.
- RA6: Ability to use scientific assessment systems
- RA7: Capacity of apply methodology Research

envelope musculoskeletal pain and motor control.

- RA8: Ability to learn based on compliance with the deontological obligations of the profession and normo praxis criteria.

The table below shows the relationship between the competencies developed in the subject and the learning outcomes that are pursued:

Competences	Learning Outcomes
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, , CE7, CE9, CE10, CE20, CE27	RA1: Understanding of the fundamental contents related to the contents of the subject
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA2: Understanding of the basic principles and methodology of the different clinical approaches from scientific evidence. • Basic principles of the methods of application of traction techniques. • Basic principles of the methods of application of manual techniques. • Basic principles of the methods of application of mobility techniques. • Basic principles of the methods of application of mobility techniques of physiological movements. • Basic principles of the methods of application of rhythmic oscillation techniques.
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA3: Ability to assess the neurophysiological effects of manual therapy on the central and peripheral nervous system
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA4: Ability to assess the neurophysiological effects of manual therapy on myofascial trigger points.
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA5: Ability to assess the spinal cord and motor effects of manual therapy.
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA6: Ability to use scientific assessment systems
CB2, CB3, CB4, CB5, CT3, CT4, CT6, CT9, CT12, CT13, CE1, CE2, CE3, CE4, CE7, CE9, CE10, CE20, CE27	• RA7: Ability to apply research methodology on musculoskeletal pain and motor control
CB2, CB3, CB4, CB5, CT9, CE9, CE9	• RA8: Ability to learn based on compliance with the deontological obligations of the profession and criteria of norm praxis

4. CONTENTS

This section indicates the content of each of the topics contained in each learning unit:

UA1: Neurophysiological Effects of Neurodynamics, Exercise and Motor Control.

- *Topic 1: Effects of Neurodynamics*
- *Topic 2: Neurodynamic Exploration*

UA2: Neurophysiological Effects of Accessory Movements, Manipulations and Tractions.

- *Topic 3: Spinal mobilizations*
- *Theme 4: Peripheral mobilizations*
- *Topic 5: Manipulations*

UA3: Neurophysiological Effects of Mobilizations with Movement:

- *Topic 6. Column MWM*
- *Topic 7. Peripheral MWMs*

UA4: Neurophysiological Effects of Myofascial Trigger Points:

- *Topic 8. Manual therapy treatments for myofascial trigger points. Application in the objective examination of the upper limb*

In order to develop the competencies and achieve the learning objectives indicated, the activities indicated in the following table must be developed:

5. TEACHING-LEARNING METHODOLOGIES

Learning Outcomes	Learning activity	Type of training activity	Contents
RA1, RA2, RA3, RA5, 6, RA7, RA8	Activity 1 Theoretical Knowledge Test	Self-instruction Master-Class Case Study Analysis	UA1, UA2, UA3 y UA4
RA1, RA2, RA3, RA5, 6, RA7, RA8	Activity 2 Portfolio	Self-instruction Laboratory Practices Case Study Analysis	UA1, UA2, UA3 y UA4
RA1, RA2, RA5 RA6, RA7, RA8	Activity 3 OSCE	Self-instruction Laboratory Practices Case Study Analysis	UA1, UA2, UA3 y UA4
RA1, RA2, RA4, RA6, RA7, RA8	Activity 4 Clinical Case	Self-instruction Master Class Case Study Analysis	UA1, UA2, UA3 y UA4

The following are the types of teaching-learning methodologies that will be applied:

Assessable Activity	Evaluation criteria	Weight (%)

Theoretical knowledge test	Acquire the necessary theoretical skills on the neurophysiological effects of Neurodynamics on a patient with neuromusculoskeletal dysfunctions	30%
Portfolio	Acquire and apply the theoretical and practical skills necessary to develop and disseminate theoretical/practical knowledge about neuromusculoskeletal dysfunctions	10%
Practical	Acquire and apply the manual skills necessary to explore and treat patients with neuromusculoskeletal dysfunctions.	20%+20%
Case report	Acquire and apply the theoretical skills necessary to address a theoretical/practical clinical case on a patient with neuromusculoskeletal dysfunctions.	20%

6. TRAINING ACTIVITIES

The types of training activities that will be carried out and the student's dedication in hours to each of them are identified below:

Face-to-face modality:

Training activity	Number of hours
Case Study Analysis	10
Laboratory Practices	40
Master-class	15
Self-instruction	50
Scientific papers	25
Tutorials	10
TOTAL	**150 hours**

7. EVALUATION

This subject will be evaluated continuously with theoretical tests, with the realization of clinical simulation practices and the teaching methodologies that will be carried out in the classroom and in the traditional and advanced Simulator Room during the first semester.

Class attendance is **mandatory**. If the student does not attend class more than 50% of the time, they will lose the possibility of taking the exam in the ordinary call, and will have to take the exam directly in the extraordinary call.

The evaluation system will be continuous so that the various learning activities will be grouped into two general types of tests:

- Knowledge tests: 30%
- Laboratory Internship 20% + 20%
- Case/problem: 20%
- Portfolio: 10%

The final grade of the subject will be obtained from the sum of the grades obtained in the two sections mentioned above, as long as a minimum of 5.0 is obtained in each of the subsections of the two groups of tests them.

Face-to-face modality:

Evaluation system	Weight
Knowledge Test	30%
Practice	20%+20%
Portfolio (Simulated Hospital)	10%
Case report	20%

Evaluation of knowledge tests, laboratory tests and clinical cases: These may be multiple-choice tests, short questions, clinical cases, practical tests, OSCE or any other objective test that serves to assess the theoretical and practical knowledge of the subject. The subject included in this test must be passed with a grade equal to or greater than 5.0. If the grade obtained is less than 5.0, the student will have to take another objective test in the extraordinary call in July. Likewise, this extraordinary test must be passed with a grade equal to or greater than 5.0 in order to pass the subject.

Evaluation of Portfolio activities: These may be a portfolio of clinical cases, summaries of practical tests or OSCE, reflective notebooks, preparation of artifacts and materials, critical reading of articles or any other activity that serves to assess the theoretical and practical knowledge of the subject. The subject included in this test must be passed with a grade equal to or greater than 5.0. If the grade obtained is less than 5.0, the student will have to take another objective test in the extraordinary call in July. Likewise, this extraordinary test must be passed with a grade equal to or greater than 5.0 in order to pass the subject. The grade obtained in the clinical case will average with the other knowledge tests, as long as its grade is not less than 5.0.

When you access the virtual campus you will be able to find the description of the activities you will have to carry out, as well as the deadline and evaluation procedure for each one

7.1. Ordinary call

To pass the subject in the ordinary call, it is necessary to obtain a final grade equal to or greater than 5.0, which will result from the sum of the grades obtained in the different assessable activities, as long as the grade is greater than or equal to 5.0 out of 10.0 in each of the assessable activities of the subject.

7.2. Extraordinary call

To pass the subject in the extraordinary call, it is necessary to obtain a grade greater than or equal to 5.0 out of 10.0 in the final grade of the subject. In the event that there are deliverable activities that have not been submitted or not passed in the ordinary call, they must be submitted after having received the corresponding corrections from the teacher.

8. SCHEDULE

This section indicates the schedule with delivery dates of assessable activities of the subject:

Assessable activities	Date
Activity 1: Knowledge Tests	Week 15
Activity 2: Portfolio	Weeks 13 & 17
Activity 3: OSCE	Weeks 8 and 14
Activity 4: Clinical Case	Weeks 7 and 16

This schedule may be modified for logistical reasons of the activities. Any modification will be notified to the student in a timely manner.

9. BIBLIOGRAPHY

Recommended bibliography is indicated below:

- "23 and 1/2 hours: What is the single best thing we can do for our health?"
- [video] Canada: Michael Evans and Mercury Films Inc.; 2011.
- Banks, K 2010, *Maitland's clinical companion: an essential guide for students*, Churchill Livingstone/Elsevier, Edinburgh.
- Banks, K & Henveld, E 2005, *Maitland's peripheral manipulation*, 4th ed. edn, Elsevier/Butterworth Heinemann, Edinburgh.
- Banks, K & Henveld, E 2005, *Maitland's vertebral manipulation*, 4th ed. edn, Elsevier/Butterworth Heinemann, Edinburgh.
- Boyling, J and Jull G, (2005). *Grieve's Modern Manual Therapy*. *The Vertebral Column* 1st ed. Churchil Livingstone
- Butler, D 2000, *The sensitive nervous system*, NOI Publications, Adelaide
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- FORTEMA, Pontevedra
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- García Sánchez PC, "23 and 1/2 Hours: What a PT could do to improve our patients general health" http://ed.ted.com/on/MgPm8FnB [web page] Spain: 2013
- "Fundamentals of Kinesitherapy", Chapter 03 in "Kinesitherapy. Physiological bases and practical application" Melián A, Ed. Elsevier; 2013
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- Jones, M (2011). "CR Theory & Practice." Practical notes from *MPTP,* ICPY, UniSA, Adelaide
- Jones, M and Magarey, M (2011). "Subjective Assessment."
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- “Understanding Pain in less than five minutes” [video] Australia: GP Access and Hunter Integrated Pain Service, NSW Goverment.; 2011

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

From the Educational Guidance and Diversity Unit (ODI) we offer support to our students throughout their university life to help them achieve their academic achievements. Other pillars of our action are the inclusion of students with specific educational support needs, universal accessibility on the different campuses of the university and equal opportunities.
This Unit offers students:

1. Accompaniment and follow-up through the realization of personalized counseling and plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made, that is, at the level of methodology and evaluation, in those students with specific educational support needs, thus pursuing equality of opportunities for all students.
3. We offer students different extracurricular training resources to develop various skills that will enrich them in their personal and professional development.
4. Vocational guidance through the provision of tools and advice to students with vocational doubts or who believe that they have made a mistake in the choice of degree.

Students who need educational support can write to us at:
orientacioneducativa@universidadeuropea.es

11. SATISFACTION SURVEYS

Your opinion matters!

The European University encourages you to participate in satisfaction surveys to detect strengths and areas for improvement in the teaching staff, the degree and the teaching-learning process.

The surveys will be available in the survey space of your virtual campus or through your email.

Your assessment is necessary to improve the quality of the degree.
Thank you very much for your participation.