



Teaching Guide				
Identifying Data			2022/23	
<b>Subject (*)</b>	Multidisciplinary Approach in Pain: Neurobiology, Pain and Disability, Evaluation Systems, New Parad	<b>Code</b>	651516006	
<b>Study programme</b>	Mestrado Universitario en Discapacidade e Dependencia (plan 2015)			
Descriptors				
<b>Cycle</b>	<b>Period</b>	<b>Year</b>	<b>Type</b>	<b>Credits</b>
Official Master's Degree	2nd four-month period	First	Optional	6
<b>Language</b>	Spanish			
<b>Teaching method</b>	Face-to-face			
<b>Prerequisites</b>				
<b>Department</b>	Fisioterapia, Medicina e Ciencias Biomédicas			
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<b>Web</b>				
<b>General description</b>	En esta asignatura se profundiza en los aspectos neurobiológicos del dolor crónico; se revisan los conceptos actuales sobre la fisiopatología del dolor más relevantes en su manejo clínico; se estudian las implicaciones del dolor, especialmente, en la esfera sensitiva y motora; y se analizan las diferentes pruebas de valoración y las estrategias de tratamiento del dolor crónico más actuales y basados en la evidencia disponible.			

Study programme competences	
Code	Study programme competences
A8	CERF3. Ser capaces de entender a fisiopatoloxía da dor relevante na práctica clínica así como as súas implicacións dende un punto de vista sensitivo-perceptivo-motora
A9	CERF4. Capacidade para deseñar e executar proxectos de investigación na problemática bio-psico-social da dor
B1	CB6. Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación
B7	CG2 Identificar, avaliar e resolver os problemas derivados da presenza de discapacidade e dependencia
B9	CG4 Ser capaz de intervir na problemática derivada da discapacidade e da dependencia
B10	CG5 Capacidade para integrar coñecementos científicos de carácter avanzado ligados ao ámbito da discapacidade e a dependencia
C6	CT6. Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas aos que deben afrontarse
C7	CT7. Ser capaz de valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade?

Learning outcomes			
Learning outcomes	Study programme competences		
	To describe the clinical and socioeconomic impact of chronic pain.	AR9	BR1
To delve into the neurobiological aspects of pain.	AR8	BR1 BR10	CR6
To compare the paradigms used to explain pain.	AR8 AR9	BR10	CR7
To identify the characteristics and clinical manifestations of different types of pain.	AR8	BR7 BR9	
To review the current concepts on the physiopathology of pain to clinical management.	AR8 AR9	BR1 BR7 BR9	



To study the implications of pain from a sensitive-perceptive-motor point of view.	AR8	BR7 BR9 BR10	
To identify the common characteristics of chronic pain syndromes.		BR1 BR7 BR9 BR10	
To review and be able to apply different pain assessment tests.	AR9	BR1 BR7 BR9	CR7
To analyze new strategies for the treatment of chronic pain, to study its evidence and to know the recommendations for its use in clinical practice.	AR9	BR1 BR7 BR9 BR10	CR6 CR7

Contents	
Topic	Sub-topic
1. Epidemiology of pain	1.1. Epidemiology of musculoskeletal pain. Basic concepts. 1.2. Epidemiology of low back pain 1.3. Epidemiology of cervical pain 1.4. Epidemiology of osteoarthritis 1.5. Epidemiology of chronic widespread pain and fibromyalgia
2. Paradigms in pain management: pain as a multidimensional experience	2.1. Pathoanatomical model 2.2. Biopsychosocial model 2.3. Model of the neuromatrix
3. Neurobiological aspects of pain	3.1. Definitions of pain 3.2. Characteristics and clinical manifestations of pain 3.3. Cellular and molecular properties of primary afferent neurons 3.4. Inflammatory mediators and pain modulators 3.5. Mechanisms modulating the painful response: neuroplasticity 3.6. Brain and pain 3.7. Genetics and pain
4. Pathophysiology of chronic pain	4.1. Definition of the phenomenon of centralization 4.2. Wind-up phenomenon 4.3. Changes in neurotransmitters 4.4. Functional alteration of excitatory and inhibitory connections 4.5. Creation of new connections 4.6. Supraspinal neuroplastic changes: reorganization of somatosensory and motor cortical maps 4.7. Modification of the response pattern of cortical and subcortical areas 4.8. Impact of emotional and cognitive-behavioral factors 4.9. Pain as a multisystem response: involvement of the SNA, neuroendocrine and immune
5. Chronic pain syndromes	5.1. Fibromyalgia 5.2. Chronic Fatigue Syndrome 5.3. Complex regional syndrome type I 5.4. Others



6. Pain assessment methods	6.1. Clinic history 6.2. Scales of pain intensity measurement 6.3. Scales to measure "yellow flags" 6.4. Scales of functional disability 6.5. Quality of Life Scales Related to Health 6.6. Other scales of measurement 6.7. Physical tests
7. Analysis and review of the evidence on new pain treatment strategies	7.1. Pain pedagogy 7.2. Therapeutic exercise 7.3. Gradual motor imagination 7.4. Other methods

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Introductory activities	C7	0	2	2
Guest lecture / keynote speech	A8 A9 B1 B7 B9 B10 C6 C7	18	36	54
Case study	A8 B1 B7 B9 B10	0	25	25
Document analysis	A8 A9 B1 B9 B10 C6 C7	0	25	25
Directed discussion	B1 C6 C7	4	12	16
Multiple-choice questions	A8 B1 B9 B10	1	21	22
Personalized attention		6	0	6

(\*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
Methodologies	Description
Introductory activities	The study programme competencies, learning aims, contents, planning, methodologies, personalized attention and assessment will be presented. The student will be given the possibility of sending the coordinator the interests and motivations related to the subject in order to facilitate the learning proces
Guest lecture / keynote speech	The magisterial sessions correspond to two types of classes: (i) the face-to-face theoretical classes taught in the classroom; (ii) to the asynchronous classes that will be delivered to students in various formats (video-lessons, notes in pdf format, etc.) and that will be posted in Moodle. They will be intended primarily for the purposes of knowledge or knowledge. It will be primarily intended for the purposes of knowledge.
Case study	The students, divided into small groups, will work on a clinical case (real or supposed) characterized by the presence of chronic pain, with the aim of proposing questions that contribute to identify the pathogenic, to study their characteristics and relate them to the painful syndromes studied in the subject, propose alternatives for exploration, evaluation and / or therapeutic approaches in a reasoned way.  The student will work on clinical cases (real or supposed) characterized by the presence of chronic pain, with the aim of proposing questions that contribute to identifying the etiopathogenic, to study their characteristics and to relate them to the painful syndromes studied in the subject, propose reasons for exploration, evaluation and / or therapeutic approaches..
Document analysis	It will consist of two parts: (i) Search and analysis of multimedia documents (blogs, videos, web page, Twitter accounts, etc.) relevant to the subject. Each student will analyze two documents and explain why their choice and why the recommendation of their reading, viewing or monitoring.  (ii) From an article related to the subject, the metric characteristics of its publication journal, and an analysis of the different sections of the article will be analyzed. In addition, a search for 2 articles published in the last 5 years related to the topic of such article and a general summary of each of them will be added.



Directed discussion	Through this technique of group dynamics, students will freely discuss a topic previously selected by one of the teachers. Students will be coordinated by a moderator.
Multiple-choice questions	The exam will consist of 30 simple choice questions, where each 2 incorrect answers will subtract 1 right answered one. The exam will have a value of 40% of the total mark of the subject.

Personalized attention	
Methodologies	Description
Case study Multiple-choice questions Directed discussion Guest lecture / keynote speech Document analysis	<p>The personalised attention will realise face-to-face form and through the platform Microsoft Teams, Virtual Campus and email; and it will be able to adapt to different modalities and contexts:</p> <ul style="list-style-type: none"> <li>- Through tutorías, specifically requested by the/the student/the or subgroup of students/the, the students will be able to resolve questions to any one of the teaching guide's steps.</li> <li>- During the two methodologies of work grupal -discussion directed and analysis of documentary sources- the student will receive a feedback of the execution of such tasks, and will be able to resolve the doubts .</li> <li>- During the realisation of the study of cases, the student have the follow-up by part of the professor through the resolution of the relative doubts to the task.</li> <li>- Through the Virtual Campus, will create a forum of doubts for each subject where the students can launch his questions and/or establish debate between professor/students or between the students.</li> </ul> <p>*For the students with recognition of dedication part time and dispenses academician of exemption of assistance, each student has to contact with the coordinator of the matter to the start of the course to establish the modality of preferential personalised attention; and fix to the start of course the possible adaptations of the tasks.</p>

Assessment			
Methodologies	Competencies	Description	Qualification
Case study	A8 B1 B7 B9 B10	The student's ability to carry out the clinical reasoning process on real or fictitious cases is evaluated, as well as the discussion on their proposed solution, by answering the questions asked about such cases.	20
Multiple-choice questions	A8 B1 B9 B10	Multiple choice test with a total of 30 questions. Every 2 wrong answers will subtract one right.	40
Directed discussion	B1 C6 C7	Attendance and active participation in the two scheduled face-to-face sessions are evaluated.	20
Document analysis	A8 A9 B1 B9 B10 C6 C7	The student's ability to carry out the clinical reasoning process on real or fictitious cases is evaluated, as well as the discussion on their proposed solution, by answering the questions asked about such cases.	20

Assessment comments
The evaluation criteria will be maintained for all the summons of the academic course.

Sources of information



<p><b>Basic</b></p>	<ul style="list-style-type: none"> <li>- Butler D (2010). Explicando el dolor. Adelaida, Australia: Noigroup</li> <li>- Enriquez-Blanco, H., Schneider, R., Rodríguez, J. T. (2010). Síndrome del intestino irritable y otros trastornos relacionados.. Madrid: Panamericana</li> <li>- Iannetti, G.D., Mouraux, A. (2010). From the neuromatrix to the pain matrix (and back). Exp Brain Res</li> <li>- Sengupta, J.N. (2009). Visceral Pain: the neurophysiological mechanism. Handb Exp Pharmacol</li> <li>- Nijs, J., Van Houdenhove, B. (2009). From acute musculoskeletal pain to chronic widespread pain and fibromyalgia: application of pain neurophysiology in manual therapy practice. Manual Therapy</li> <li>- Serra Catafau J. (2007). Tratado de dolor neuropático. Madrid: Médica Panamericana</li> <li>- Stephen B. McMahon, Martin Koltzenburg (2006). Wall y Melzack tratado del dolor. Madrid: Elsevier. 5ª ed.</li> <li>- Kosek, E., Clauw, D., Nijs, J., Baron, R., Gilron, I., Harris, R. E., ... &amp; Sterling, M. (2021). Chronic nociplastic pain affecting the musculoskeletal system: Clinical criteria and grading system. . Pain, 162(11), 2629-2634.</li> <li>- Basbaum, A.I. &amp; Jessell, T.M. (2013). Pain, (pp. 530-555). En E.R. Kandel et al. (Eds.). Principles of neural science.. New York: McGraw-Hill.</li> </ul>
<p><b>Complementary</b></p>	

**Recommendations**

**Subjects that it is recommended to have taken before**

**Subjects that are recommended to be taken simultaneously**

**Subjects that continue the syllabus**

**Other comments**

To help achieve

a sustainable environment and meet the strategic objectives

of the Green Campus Plan of the Faculty of Physiotherapy, the

documentary work carried out in this subject may be requested in paper or

virtual format or computer support. If they are done on paper, the following general recommendations will be followed as far as possible:- Plastics will not be used.- Double-sided prints will be made.- Recycled paper will be used.- Drafting will be avoided.

(\*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.