UNIVERSIDADE DA CORUÑA

Teaching Guide			
Identifying Data			2018/19
Subject (*)	Multidisciplinary Approach in Pain: Neurobiology, Pain and Disability, Evaluation Systems, New Parad	Code	651516006
Study programme	Mestrado Universitario en Discapacidade e Dependencia (plan 2015)		

Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Optional	6

Language	Spanish		
Teaching method	Face-to-face		
Prerequisites			
Department	Ciencias Biomédicas, Medicina e Fisioterapia		
Coordinador	Rodriguez Romero, Beatriz	E-mail	beatriz.romero@udc.es
Lecturers	Patiño Nuñez, Sergio Rodriguez Romero, Beatriz Souto Gestal, Antonio	E-mail	sergio.patino@udc.es beatriz.romero@udc.es antonio.souto@udc.es
Web			
General description	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 / results	
Code	Study programme competences / results
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 enfrontarse
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 / results		
To describe the clinical and socioeconomic impact of chronic pain.	AR9	BR1	CR6
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 / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Introductory activities	C7	1	0	1
Guest lecture / keynote speech	A8 A9 B1 B7 B9 B10 C6 C7	12	36	48
Critical bibliographical	A8 A9 B1 B9 B10 C6 C7	4	16	20
Laboratory practice	A8 A9 B1 B7 B9 B10 C6	18	36	54
Case study	A8 B1 B7 B9 B10	4	8	12
Multiple-choice questions	A8 B1 B9 B10	1	12	13
Personalized attention		2	0	2
(*)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	Through these initial activities will try to identify the competences, interests and motivations of the student with the aim of facilitating the learning process. The study program competencies, learning aims, personalized attention, methodologies, assessment and all main aspects of this subject will be presented.
Guest lecture / keynote speech	The magisterial sessions correspond to the theoretical classes that will be taught in the classroom. The key aspects of the subject will be presented in a synthetic and sequential manner, in order to transmit knowledge and facilitate learning to the student. They will be done through oral presentation, with or without audiovisual support. It will be primarily intended for the purposes of knowledge.
Critical bibliographical	The student will use audiovisual and / or bibliographic documents (mainly scientific articles) given by the teachers and / or that the student has searched and selected. The objective of its analysis will be to reinforce and / or complement basic aspects of the subject, working at the same time on the ability to integrate advanced scientific knowledge, linked to the field of disability, dependence and pain. Likewise, students will be asked to read some text (chapter of books) or documents (scientific articles) that will allow them to deepen in the theorical and practical contents.
Laboratory practice	Practical activities will be carried out mainly aimed at the acquisition of pain assessment skills and methodologies (identification and interpretation of self-administered questionnaires, performance and interpretation of physical tests, demonstrations of other tests), and the integration of knowledge that contributes to a better understanding of the neurophysiology of the sensory pain.
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.

Multiple-choice questions	The exam will consist of 30 multiple choice questions, where each 2 incorrect answers will subtract 1 right answered one. The exam will have a value of 70% of the total mark of the subject.

Personalized attention	
Methodologies	**Description**
Multiple-choice questions Guest lecture / keynote speech Critical bibliographical Laboratory practice	The doubts and difficulties may be resolved during the classes or through the request for face-to-face / virtual tutorials. During the case study the personalized attention will be made during the class. During of the critical bibliographical activities, the student will have the follow-up by the teacher through tutorials previously requested by the student. In addition to "in situ" feedback during the practices given by the teacher, the student will be able to request the face-to-face or non-face-to-face tutorials to resolve issues related to the course of the practice. For the students with recognition of part-time dedication or academic exemption of attendance, the 5% corresponding to the attendance to the practices will be replaced by another task designed by the teachers at the beginning of the course and after knowing the situation of the student.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Case study	A8 B1 B7 B9 B10	The ability of the student to carry out the process of clinical reasoning on a real or fictitious case, as well as the discussion on their proposed solution is evaluated through the questions asked about the case.	5
Multiple-choice questions	A8 B1 B9 B10	Multiple choice test with a total of 30 questions. Every 2 wrong answers will subtract one right.	70
Critical bibliographical	A8 A9 B1 B9 B10 C6 C7	The ability of the student to make an adequate search strategy is evaluated, as well as the ability to synthesize the scientific documents identified from that search and / or facilitated by the teachers.	20
Laboratory practice	A8 A9 B1 B7 B9 B10 C6	Attendance at all practices will have a value corresponding to 5% of the grade. In addition to assistance, aspects such as attitude and active participation during sessions, skills, etc. will be taken into account.	5

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

Sources of information

Basic	- Zamorano Zárate E. (2013). Movilización neuromeníngea: tratamiento de los trastornos mecanosensitivos del sistema nervioso. Madrid: Panamericana - Butler D (2010). Explicando el dolor. Adelaida, Australia: Noigroup - Enriquez-Blanco, H., Schneider, R., Rodríguez, J. T. (2010). Síndrome del intestino irritable y otros trastornos relacionados.. Madrid: Panamericana - Iannetti, G.D., Mouraux, A. (2010). From the neuromatrix to the pain matrix (and back). Exp Brain Res - Sengupta, J.N. (2009). Visceral Pain: the neurophysiological mechanism. Handb Exp Pharmacol - Nijs, J., Van Houdenhove, B. (2009). From acute musloskeletal pain to chronic widespread pain and fibromyalgia: application of pain neurophysiology in manual therapy practice. Manual Therapy - Serra Catafau J. (2007). Tratado de dolor neuropático. Madrid: Médica Panamericana - Stephen B. McMahon, Martin Koltzenburg (2006). Wall y Melzack tratado del dolor. Madrid: Elsevier. 5ª ed. - Moseley, G.L., Hodges, P.W. (2006). Dolor crónico y control motor. Barcelona: Masson
Complementary	

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.