UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2016/17
Subject (*)	FISIOTERAPIA XERAL		Code	651G01008
Study programme	Grao en Fisioterapia			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	Yearly	First	Obligatoria	9
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Fisioterapia			
Coordinador	Riveiro Temprano, Socorro	E-mail	socorro.riveiro.temprano@udc.es	
Lecturers	Martinez Rodriguez, Alicia Riveiro Temprano, Socorro Robles García, Verónica Souto Gestal, Antonio	E-mail	alicia.martinez@udc.es socorro.riveiro.temprano@udc.es veronica.robles@udc.es antonio.souto@udc.es	
Web				
General description	This subject aims to train students to choose the apropriate technics of electrotherapy, ultrasonic therapy, light therapy, magnetic therapy, massage therapy, hydrotherapy and balneotherapy, based on existing scientific knowledge, clinical experience and specific needs (contextual, clinical and psychosocial ones). To get it, the key points are the knowledge of the physical nature of each agent, the effects produced (other adjustable parameters) and how they translate them into physiological and therapeutic effects. To get the skills in the use of equipment and techniques, self working- besides the laboratory classes -is required. One group in the second module (electrotherapy and ultrasonotherapy) will be in ENGLISH for those students interested (but ONLY in the SECOND TERM, so there WILL NOT BE ANY ENGLISH CLASSES IN THE FIRST TERM- NOR THEORETICAL NOR PRACTICAL LESSONS).			

Study programme competences / results	
Code	Study programme competences / results
A3	Conocer y comprender los métodos, procedimientos y actuaciones fisioterapéuticas, encaminados tanto a la terapéutica propiamente dicha a aplicar en la clínica para la reeducación o recuperación funcional, como a la realización de actividades dirigidas a la promoción y mantenimiento de la salud.
A8	Ejecutar, dirigir y coordinar el plan de intervención de fisioterapia, utilizando las herramientas terapéuticas propias y atendiendo a la individualidad del usuario.
C1	Expresarse correctamente, tanto de forma oral coma escrita, nas linguas oficiais da comunidade autónoma.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.

Learning outcomes			
Learning outcomes	Study programme competences / results		
Identify the physical bases of the electromagnetic agents (currents, laser and phototherapy, magnetics therapy), mechanical (ultrasounds, masotherapy, hidrotherapy), thermal (criotherapy and termotherapy) and chemical (balneotherapy)	A3		
- To know the indications and contraindicacións of each modality and its causes due to translation of the physical effects into physiological and therapeutic effects.	A3		
- To act looking for the hygiene and the prevention of infections, as well as for the correct preservation of the machines and elements used.	A3		
To select the body position, placement of the machine, pillows and other elements to preserve the patient´s and physiotherapist´s ergonomy and the efficiency of the intervention.	A3		

To select and use correctly the parameters of application and elements associated to the machine or technicl selected.	A3		
To adapt the application to the concrete needs of health- clinical or psicosocial ones- recognizing the complementary character of the majority of the passive therapeutic modalities.	A8		
To identify the alarm signs to stop the therapy or to change the parameters selected.	A8		
To differentiate the applications based in the clinical experience from that based in the scientific evidence, using the first empiric knowledge when scientific evidence does not exist.			C6
To explain the actions to the patients using a comprehensible language: the possibilities of intervention, the possible adverse effects and the existence of other alternatives of intervention.			C1

Contents	
Topic	**Sub-topic**
MÓDULO I MASOTHERAPY AND OTHER THERAPIES -Unidad 1. Masotherapy and other therapies TEMA 1. Masotherapy	History of masotherapy. Efects. Modalities of application. Indications and contraindications.
TEMA 2. Magnetotherapy	Definition Efects. Parámeters. Indications and contraindications.
TEMA 3. Hidrotherapy and balneotherapy	Concept and general topics. Types of water, physical-chemistry principles Modalities of application Efects Indications of contraindications
TEMA 4. Climatotherapy and talasotherapy	Concept and general topics. Types of climates. Efects Indications of contraindication
TEMA 5. Termotherapy and criotherapy	Concept and general principles. Modalities of application Efects Indications and contraindications
TEMA 6. Fototerapia	Concept and general principles. Modalities of application Efects Indications and contraindications
TEMA 7. Other therapies. Vibrotherapy.	Concept and general topics. Modalities of application Efects Indications and contraindications
PRACTICAL LESONS. MASOTHERAPY AND OTHER THERAPIES 1.- Masotherapy 2.- Magnherapy 4.-Termotherapy 5.-Criotherapy 6.-Phototherapy	Description of the machines Description of the applicacion protocols. To apply the technics.

II: Electrotherapy and ultrasonotherapy. Professor: Alicia Martínez Rodríguez. UNIT 1. Electrotherapy and ultrasonotherapy bases. TEMA 1. Introduction and main points.	Therapeutic use of the electrical and sound phisical agents. Context of the intervention in the biopsicosocial model.
THEME 2. Electrotherapy and ultrasonotherapy principles.	Electromagnetic spectrum. Main paramenters of the electromagnetic currents. Mechanical waves: ultrasound physical principles.
TEMA 3. Clasification of electrical and electromagnetical currents for clinical use.:low frequency, medium frequency and high frequency currents.	Definition of electrotherapy. Clasification: polarity; continuity/pulsed (direct, altern or pulsed current).Other parameters to clasify the currents: specific denomination frequency of the current; ow frequency, medium frequency and high frequency currents.
UNIT 2. Electrotherapy: low frequency, medium frequency and high frequency currents. TEMA 4. Galvanic current. Low frequency pulsed currents I (diadinamics, Träbert).	Physical characteristics Efects. Main parameters. Perfonmance. Indications and contraindications.
TEMA 5. Low frequency pulsed currents II: analgesic and healing (microcurrents, high voltage and TENS). Iontophoresis. TEMA 6. Low frequency pulsed currents III: strengthening. TEMA 7: Medium frequency currents: Interferencial currents, Russian currents and Aussie currents. TEMA 8: High frequency currents: shortwave, microwave, capacitive-resistive therapy.	Physical characteristics Efects. Main parameters. Perfonmance. Indications and contraindications.
UNIT 3. Mechanical waves. Ultrasonotherapy TEMA 9: Ultrasounds.	Physical characteristics Efects. Main parameters. Perfonmance. Indications and contraindications. Combined therapy (ultrasound-electrical currents)
PRACTICAL LESSONS 1. Physical bases, electrodes, conections body positioin and performance. 2. Galvanic current, diadiinamics and Trabert. Iontophoresis. 3. Low frequency currents analgesic effect I- TENS 4. Low frequency currents analgesic effect II - high voltage. 5. Low frequency currents strenghtening effect (NMES I) 6. Medium frequency currents analgesic effect (Interferencial currents) 7. Medium frequency currents for strenghtening (NMES II) 8. High frequency currents I- short-wave 9. High frequency currents II- microwave 10. Ultrasound I 11. Ultrasound II	Machine description and taking care of the matherials. Protocol description. Doing the practices. Clean and tidy the used matherials.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Introductory activities	A3	0	2	2
Guest lecture / keynote speech	A3	38	0	38
Practical test:	A3 A8 C1 C6	36	72	108
Collaborative learning	A8 C1 C6	20	20	40
Mixed objective/subjective test	A3 A8 C1 C6	5	30	35
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	ELECTROTHERAPY AND ULTRASONOTHERAPY PART Reading: physical basis in electrotherapy and ultrasonotherapy: electromagentic and mechanic waves.
Guest lecture / keynote speech	It will be initiated with lessons for the whole group (also interactive classes) in order to deal with more contents and be able to begin as soon as possible with practical lessons. The next interactive classes will be done by groups to reach the theoretical-practical integration and to make possible the active participation for students and encourage the meaningful learning.
Practical test:	As a classroom activity, will be performed in the laboratory in groups of 10 students in 1.5 hours classes, prior to the demonstration and explanation of the teacher. The practice after the class is very important to acquire the necessary skills so is strongly recommended to participate in the program of "collaboration students" to be able to open the laboratory and practice.
Collaborative learning	The work will be done in small groups and will consist of make a summary of the readings suggested, or in the resolution of questions raised by the teacher. Its implementation will be monitored throughout the course. It will be 20% of the final mark, but only will be added if the student reaches at least a 5/10 in the theoretical and practical parts, for each of the two terms.
Mixed objective/subjective test	A theoretical and a practical exam will count till 50% and 30%- respectively- of the final mark. The theoretical exam will have several open-questions of variable length depending on the group learning dynamics. Sone controls can be done during the course, and they will be only corrected if there is a doubt in the mark. Practical exam will be carried out for a clinic problem and all the parameters used will be explained. The maximum time will be 10 minutes per case. The following parameters will be assessed: a valid argument for selection the parameters; adequacy of blocks, pillows and so on and correct patient position; correct and relevant application parameters (time, intensity ...); quickly performance and absence of negative effects ("pinch" drop, risk of burn?). Misuse of equipements and materials will low the mark and if something is broken the student will fail automatically. The collaborative learning mark will be added only if there has been successful in the theoretical and practical exam (5/10). A final average mark will be given only if both parts have been successful and being aware that a minimun of 5 of 10 points will be necessary in each theoretical and practical exams.

Personalized attention	
Methodologies	Description

Practical test: Mixed objective/subjective test Guest lecture / keynote speech	MASOTHERAPY AND OTHER THERAPIES PART The keynote session is conducted in the classroom 1 with relevant visual and teaching aids (transparencies, slides ...) starting with a question and develop its implications for the classroom. That's direct involvement of the student is needed. The labs will have a demonstrative character. To acquire the relevant skills the students will have to practice on their own. It is recommended not to leave any questions for the end, as well as hinder learning, it is likely that given the demand can not be resolved to everyone. ELECTROTHERAPY AND ultrasonotherapy PART The keynote session is conducted in the classroom 1 with relevant visual and teaching aids (transparencies, slides, wax ...) starting with a question and develop its implications for the classroom. That's direct involvement of the student is needed. The labs will have a demonstrative character. To acquire the relevant skills the student will have to practice on his/her own. There will be a schedule of face tutorials and one of non-contact, in order to resolve doubts or reinforce specific content. It is recommended not to leave any doubts as to the end, in addition to hinder learning, it is likely that given the demand can not be resolved in time. The delivery schedule set of non-contact work for the center for sequencing the work will continue. Also will seek to create a forum with frequently so that they can be consulted by everyone doubts.

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**
Collaborative learning	A8 C1 C6	The teacher will present the questions / topic that must be solving for the students and can be used as controls. It does not count for general note, except as to benefit the student in the case of showing a steady and dedicated work during the course and previously exceeding 50% of the score. Exclusively for the module of ELECTROTHERAPY AND ULTRASONOTHERAPY, there will be a peer tutoring program that will add a point to the final mark. It is optional and the methodology will be explained in the class.	20

Mixed objective/subjective test	A3 A8 C1 C6	The theoretical examination will up to 50% of the grade, and the practical test 30% of the final grade. Theoretical exam: may have a first part of test questions, and a second part of open questions, reasoning ability or capacity of synthesis of networking and writing are checked. Just in case of doubtful note, it may be referred to the results of ongoing evaluation controls for the corresponding module. The practical test, in general, shall consist of 2 cases to be addressed by students for theoretical and practical resolution. Students will be assessed by a teacher who does not have to match the one who taught the student in practical lessons. To be able to average, at least 50% of the maximum score in each of the examinations (theoretical and practical ones) must be achieved. The collaboratory learning mark will be added only if the theoretical and practical exams were passed for each of the modules. The mean mark will only be done if both parts are passed.	80

Assessment comments
Attendance at the laboratory is highly recommended and non-attendance should be well justified and may prevent the continuous assessment. Approved each quarter note to the July, including saved. If it had not approved the two modules in Jule, the part will be saved for the following year if the score is at least 70% of the grade. If someone is presented to test one of the two parts and not the other, will be considered as not presented in the final grade. If it is presented at both parts can no longer be considered as not presented. For this course, MASSOTHERAPY AND OTHER THERAPIES will the first part (in the first quarter) and will continue with electrotherapy and ultrasonotherapy part in the second quarter .

Sources of information

Basic	- (). . - Koury JM (1998). Acuaterapia. Barcelona:Ediciones Bellaterra - Schmid F (1987). Aplicación de corrientes estimulantes. Barcelona:Ed. Jims - Hernández Álvaro J y Tovar Pescador J (1997). Electricidad y magnetismo. Jaén: Universidad de Jaén - Watson T. (2009). Electroterapia basada en la evidencia. Barcelona. Elsevier - Rodriguez M (2004). Electroterapia en fisioterapia. . Madrid: Ed. Médica Panamericana - Termatalia (2008). Jornadas técnicas sobre hidrología médica. - Martínez et al (1998). Manual de medicina física. Barcelona: Harcourt Brace - Prentice WE (1990). Medicina deportiva. Técnicas terapéuticas. Barcelona: Mosby - Pérez Fernández et al. (2005). Principios de hidroterapia y balneoterapia. Madrid: McGraw Hill Interamericana - Andrade, Carla-Krystin, (2004). Masaje basado en resultados. Barcelona : Editorial Paidotribo - Robinson AJ, Snyder-Mackler LS. (2008). Clinical Electrophysiology. Electrotherapy and electrophysiologic testing. Philadelphia: Lippincott Williams & Wilkins - Albornoz Cabello M, Meroño Gallut J. (2012). Procedimientos generales de fisiotrapia. Práctica basada en la evidencia. Barcelona: Elsevier - San José Arango, C (2012). Hidrología médica y terapias complementarias. Sevilla: Publicaciones universitarias - Sheila Kitchen, Sarah Bazin (1998). Electroterapia de Clayton . São Paolo : Editora Manole - Low, J (1999). Electrotherapy explained : principles and practice . Boston, MA : Butterworth-Heinemann
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
ANATOMÍA I E HISTOLOXÍA/651G01001 ANATOMÍA II/651G01002 BIOFÍSICA E BIOQUÍMICA/651G01004 MARCO TEÓRICO DA FISIOTERAPIA E A REHABILITACIÓN FÍSICA/651G01006
Subjects that continue the syllabus
Other comments
It is recommended as basic carrying a day theoretical and practical classes to get the maximum and to pass the course, given the density of content, abstraction of their fundamentals and the first course. It is important to have knowledge of English or do some of the same course, especially for Electrotherapy And Ultrasound therapy part. Although the language most commonly used by teachers of this subject is Spanish, interchangeably use Spanish and Galician and, of course, students can express themselves in the language of their choice. The exam in Galician will be provided at the request of interested students. Such request shall be made not later than one week before the exam. For part of electrotherapy and ultrasonic therapy in practice lessons, there is the possibility of participating in a group in which the language used is English.