Teaching Guide				
Identifying Data				2021/22
Subject (*)	GENERAL PHYSIOTHERAPY		Code	651G01008
Study programme	Grao en Fisioterapia			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	Yearly	First	Obligatory	9
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Fisioterapia, Medicina e Ciencias Biomédicas			
Coordinador	Riveiro Temprano, Socorro	E-mail	socorro.riveiro.temprano@udc.es	
Lecturers	Martinez Rodriguez, Alicia Rivas Neira, Sabela Riveiro Temprano, Socorro	E-mail	alicia.martinez@udc.es sabela.rivas@udc.es socorro.riveiro.temprano@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).			

Contingency plan	1. Modifications to the contents There will be no substantial modification of the contents, but the focus will be on the most relevant aspects for the acquisition of the competences. 2. Methodologies *Teaching methodologies that are maintained Guest lecture, collaborative learning *Teaching methodologies that are modified Laboratory practices- cases will be presented through videos or photographs and discussions will be established in the corresponding practical groups. Mixed test - will become multiple-choice test Practical test- can be done through a graphic document (with image, sound or movement) or work done on a practical case. 3. Mechanisms for personalized attention to students At the request of the students in written format via email for the clarification of doubts; or via moodle through forums or direct consultations, mainly to clarify doubts or solve written tasks. For virtual meetings, TEAMS will be used upon request. The teachers will establish telematic meetings with the students for the development of the different activities, fundamentally, the expository classes and workshops, or they will supply with the explained classes. 4. Modifications in the evaluation The evaluation criteria and methodologies will be maintained, making an adaptation of the mixed test that will become multiple response and the practice that can be done through a graphic document (image or video) and / or written work done on a practical case *Evaluation observations: It is necessary to pass both semesters to be able to calculate the final mean and pass the whole of the subject. In addition, it only be possible if your marks in theoretical or practical tests are at least 50%. 5. Modifications to the bibliography or webgraphy None, all the contents will be accessed from the slideshows, or will be suministered by the teacher

Study programme competences / results	
Code	Study programme competences / results
A3	Coñecer e comprender os métodos, procedementos e actuacións fisioterapéuticas, encamiñados tanto á terapéutica propiamente dita a aplicar na clínica para a reeducación ou recuperación funcional, como á realización de actividades dirixidas á promoción e mantemento da saúde.
A7	Deseñar o plan de intervención de fisioterapia atendendo a criterios de adecuación, validez e eficiencia.
B1	CB1 - Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio
B2	CB2 - Que los estudiantes sepan aplicar sus conocimientos a su trabajo o vocación de una forma profesional y posean las competencias que suelen demostrarse por medio de la elaboración y defensa de argumentos y la resolución de problemas dentro de su área de estudio
B3	CB3 - Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio) para emitir juicios que incluyan una reflexión sobre temas relevantes de índole social, científica o ética
B4	CB4 - Que los estudiantes puedan transmitir información, ideas, problemas y soluciones a un público tanto especializado como no especializado

B5	CB5 - Que los estudiantes hayan desarrollado aquellas habilidades de aprendizaje necesarias para emprender estudios posteriores con un alto grado de autonomía
C1	Adequate oral and written expression in the official languages.
C6	Acquiring skills for healthy lifestyles, and healthy habits and routines.
C9	Ability to manage times and resources: developing plans, prioritizing activities, identifying critical points, establishing goals and accomplishing them.

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	B1	C1
- 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	B1 B5	C1
- 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 A7	B2 B3 B4	C1 C6
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.	A7		C1 C6 C9
To identify the alarm signs to stop the therapy or to change the parameters selected.	A7		C1

Contents	
Topic	Sub-topic
UNIT: MASOTHERAPY AND OTHER THERAPIES	This unit contains theoretical and practical contents, and can be thought along the course mixed with the other unit Electromagnetic spectrum. Main paramenters of the electromagnetic currents. Mechanical waves: ultrasound physical principles.
THEME 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.
UNIT ELECTROMAGNETICAL AND MECHANICAL WAVES	Este módulo conta dunha parte teórica e práctica, e poderá intercalarse co outro módulo ao longo do curso
UNIT ELECTROMAGNETICAL AND MECHANICAL WAVES TEMA 3. Clasification of electrical and electromagnetical currents for clinical use.:low frequency, medium frequency and high frequency currents.	This unit contains theoretical and practical contents, and can be thought along the course mixed with the other unit 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.
THEME 8: Ultrasounds.	Physical characteristics Efects. Main parameters. Perfonmance. Indications and contraindications. Combined therapy (ultrasound-electrical currents)
TEMA 10. Galvanic current	Corrente galvanica. Concepto e principios xerais Efectos. Modoos de aplicación. Indicacións e contraindicacións.
UNIT 3. Mechanical waves. Ultrasonotherapy THEME 8: Ultrasounds.	Physical characteristics Efects. Main parameters. Perfonmance. Indications and contraindications. Combined therapy (ultrasound-electrical currents)

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.
TEMA 13. Correntes de alta frecuencia ou electromagnéticas	Onda corta e microonda e radiofrecuencia. Concepto e principios xerais. Efectos. Modo de aplicación. Indicacións e contraindicacións.
TEMA 14. Outras aplicacións con estimulación eléctrica	Terapia combinada. Estimulación eléctrica funcional (FES) Electrodiagnóstico.
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
Guest lecture / keynote speech	A3 A7 B1 B3 B4 C6	48	52	100
Laboratory practice	A3 A7 B2 C9	39	50	89
Collaborative learning	A3 A7 B2 B3 B5 C1 C6 C9	0	30	30
Practical test:	A3 A7 B2 B4 C1 C6 C9	1	0	1
Mixed objective/subjective test	A3 A7 B1 B3 B4 C1 C6	2	0	2
Personalized attention		3	0	3
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description

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.
Laboratory practice	As a classroom activity, will be performed in the laboratory in groups of aproximatelly 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. For electrotherapy and mechanical waves it could be developed an colaborative networking within "Rompendo Regras" proyect, specially with the subject of Fisioterapia abdomino-pelvi-perineal. 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.
Practical test:	Computará o 30% da nota final. Platexarase un ou máis casos e o/a alumno/a que se examina deberá realizar unha aplicación fundamentando a súa elección e explicando cada parámetro. Dispoñerá dun tempo máximo de 10-15 minutos por caso. segundo asúa complexidade. Valoraranse os seguintes parámetros: validez do argumento para a selección da técnica;adecuación do mobiliario e da posición correcta do paciente; aplicación correcta e parámetros pertinentes (tempo, amplitude...); rapidez na execución e ausencia de efectos negativos (pellizco, caída dun utensilio ao chan, risco de quemadura...). O mal uso dun material baixará a nota e poderá quedar automáticamente suspenso. Poderase realizar exame parcial si a dinámica da clase o posibilita. Só se sumará a nota da aprendizaxe colaborativa si se sacase polo menos un 5/10 no exame teórico e práctico en cada módulo.
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. Some 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 10-15 minutes per case, depending on its complexity. 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**

Laboratory practice Collaborative learning Guest lecture / keynote speech	The keynote session is conducted in the classroom 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. Some of the lessons will be employed to do continuing assessment activities. 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. Preferably, the form of personalized attention to the students will be non-face-to-face, at the request of the students in written format via email for the clarification of doubts; or via moodle through forums or direct consultation, mainly to clarify doubts or resolve written tasks. For virtual meetings, TEAMS will be used upon request. Half-time students have to attend at least 50% of practical lessons to has the right to be examined. They will need to do the encommeded work individally if does not attend the classes, and it will be imply to loss the posibility of the continuing assessment.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Collaborative learning	A3 A7 B2 B3 B5 C1 C6 C9	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.	20

Mixed objective/subjective test	A3 A7 B1 B3 B4 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. 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. A partial exam, of one module, could be done, if it is allowed by the classes dynamic. Additionally, depending on the teacher´s judgement continuing assessment activities could be done for extra-mark, referred to electromagnetic and mechanic waves subject. The mean mark will only be done if both parts are passed.	50
Practical test:	A3 A7 B2 B4 C1 C6 C9	The practical test, in general, shall consist of 1 or more 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. A partial exam, of one module, could be done, if it is allowed by the classes dynamic.	30

Assessment comments
Attendance at the laboratory is highly recommended and non-attendance should be well justified and may prevent the continuous assessment. It needs at least 80% attendance in practical lessons, and no attendance in theoretical lessons will avoid participating in additional assessment activities, in case they were done. Half-time students will have to pass the same tests, individually if has not attended practical lessons (80% or more). The optional activities developed during theoretical classes for extra marks will only be possible if the student has gone to these classes. 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. Approved each quarter note to the second opportunity. The percentage assigned to each test may undergo minor modifications depending on external variations that affect the subject, however it will never be less than 50% in the case of the theoretical exam and 30% in the case of the practical exam. The fraudulent realization of the assessment implies failing in this convocatory and the missing calification in any of the assessment activities for the next one.

Sources of information

Basic	- Valera Garrido Fermín y Minaya Muñoz Francisco (2020). Electrólisis percutánea músculoesquelética. Barcelona: Elsevier - Koury Joanne M (1998). Acuaterapia. Barcelona:Ediciones Bellaterra - Watson Tim and Ethne L Nusbaum. (2021). Modalidades en electroterapia. Práctica basada en la evidencia. Barcelona. Elsevier - Termatalia (2008). Jornadas técnicas sobre hidrología médica. - Pérez Fernández María Reyes et al. (2005). Principios de hidroterapia y balneoterapia. Madrid: McGraw Hill Interamericana - Andrade, Carla-Krystin, (2004). Masaje basado en resultados. Barcelona : Editorial Paidotribo - Albornoz Cabello M, Meroño Gallut J. (2012). Procedimientos generales de fisioterapia. Práctica basada en la evidencia. Barcelona: Elsevier - San José Arango, Carmen (2012). Hidrología médica y terapias complementarias. Sevilla: Publicaciones universitarias
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
ANATOMY I AND HISTOLOGY/651G01001 ANATOMY II/651G01002 BIOPHYSICS AND BIOCHEMISTRY/651G01004 THEORICAL FRAMEWORK OF PHYSIOTHERAPY AND PHYSICAL REHABILITATION/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. The exam in Galician or Spanish will be provided at the request of interested students. Such request shall be made not later than two weeks before the exam. Following Green Campus rules, the online presentations will be preferred and if some works are on paper, then they should be done by double impression, using recycled paper and avoiding plastics.