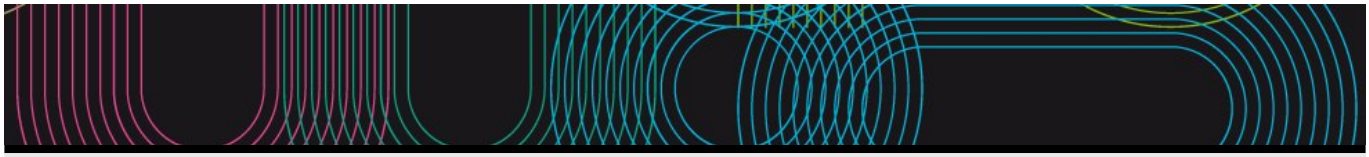

IDENTIFYING DATA				
Cardiac rehabilitation				
Subject	Cardiac rehabilitation			
Code	P05G171V01312			
Study programme	Grado en Fisioterapia			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	3rd	2nd
Teaching language	#EnglishFriendly Spanish Galician			
Department				
Coordinator	González Represas, Alicia			
Lecturers	González Represas, Alicia			
E-mail	alicia@uvigo.es			
Web	http://https://moovi.uvigo.gal/			
General description	Cardiovascular diseases are the main problem of health in developed countries. The objective of the subject is to make the students acquire the necessary knowledge to be part of the multidisciplinary team of the Cardiac Rehabilitation programs. Subject of the English Friendly program. International students may request teachers: a) materials and references bibliographies for monitoring the subject in English, b) attend tutoring in English, c) tests and assessments in English.			

Training and Learning Results	
Code	
A2	Students are able to apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the development and defence of arguments and problem solving within their field of study.
A5	Students are able to convey information, ideas, problems and solutions to both specialist and non-specialist audiences.
B1	To know how to work in professional teams as a basic unit in which professionals and other personnel of health care organizations are structured in a uni or multidisciplinary and interdisciplinary way.
B4	Acquire basic scientific training in research.
C6	Identify anatomical structures as a basis of knowledge to establish relationships dynamically with the functional organization.
C9	Know the pathophysiology of diseases, identifying the manifestations that appear throughout the process, as well as the medical-surgical treatments, mainly in their physiotherapeutic and orthopedic aspects. To identify the changes produced as a consequence of the physiotherapy intervention. Encourage the participation of the user and family in the recovery process.
C16	Analyze, program and apply movement as a therapeutic measure, promoting the participation of the patient/user in the process.
C19	Understand and perform specific methods and techniques related to the locomotor system (including manual therapies, joint manipulative therapies, osteopathy and chiropractic), neurological processes, respiratory system, cardiocirculatory system and static and dynamic alterations. Specific methods and techniques that take into account the implications of orthopedics in physiotherapy, reflex therapeutic techniques, as well as other alternative and/or complementary methods and techniques whose safety and efficacy is demonstrated according to the state of development of science.
C20	Identify the most appropriate physiotherapeutic treatment in the different processes of alteration, prevention and health promotion as well as in the processes of growth and development.
C21	Identify the situation of the patient/user through a physiotherapy care diagnosis, planning interventions, and evaluating their effectiveness in a cooperative work environment with other professionals in health sciences.
C24	Promote healthy lifestyle habits through health education.
D1	Ability to communicate orally and in writing in Galician.
D2	Computer skills related to the field of study

Expected results from this subject

Expected results from this subject	Training and Learning Results			
LO1: Describe the concept of Cardiac Rehabilitation and the structure of cardiac rehabilitation programs	A2			
LO2: Describe the anatomy of the heart and great vessels, as well as the pathophysiology of the most frequent heart diseases in cardiac rehabilitation programs	A2		C6	
LO3: Describe the medical-surgical treatments of the most frequent heart diseases in Cardiac Rehabilitation programs			C6 C9	
LO4: Describe and explain the main signs and symptoms of heart disease, as well as the most frequent assessment tests in Cardiac Rehabilitation programs			C6 C9	
LO5: Explain the physiological and therapeutic effects of exercise on the most frequent heart diseases in cardiac rehabilitation programs			C6 C9	
LO6: Design an exercise program for the most frequent heart diseases in Cardiac Rehabilitation programs			C16 C19 C20 C21	
LO7: Describe cardiovascular prevention strategies			C24	
LO8: Execute the cardiorespiratory resuscitation protocol	A2		C9 C19 C20 C21	
LO9: Run the cardiovascular assessment procedure	A2		C16 C19 C21	
LO10: Execute an exercise program in Cardiac Rehabilitation	A2		C16 C19	
LO11: Carry out, present and defend a Cardiac Rehabilitation project as a group	A2 A5	B1 B4	C20 C21	D1 D2

Contents

Topic	
Theory topic I. Introduction to cardiac rehabilitation.	I.1. Conceptual framework. Cardiac rehabilitation concept. Indications and applications of cardiac rehabilitation. Contraindications.
II. Cardiovascular system.	II.1. Cardiovascular structure and function II.2. cardiovascular pathophysiology.
III. Treatments in cardiac pathology	III.1. Medical-surgical treatments. III.2. Pharmacological treatments. III.3. Physiotherapy in the preoperative and postoperative period.
IV. Physical recognition oriented to therapeutic exercise programs for their prescription and follow-up.	IV. Cardiac exploration protocols and interpretation of tests for the design of therapeutic exercise programs.
V. Rehabilitation programs in cardiac pathology.	V.1. Cardiac rehabilitation programs in phase I in different population groups and pathologies. V.2. Cardiac rehabilitation and prevention programs in phase II in different population groups and pathologies. V.3. Rehabilitation programs in phase III in different groups population and pathologies.
VI. Prevention programs of Heart disease	VI.1. Strategies for the prevention of cardiac pathologies.
Practical topic I. Exploration protocols.	I.1. Performing cardiac examination tests. I.2. Interpretation of cardiac examination tests.
II. Cardiac rehabilitation programs.	II.1. Design of cardiac rehabilitation programs according to the cardiac exploration.
III. Action in emergencies and cardiovascular emergencies.	III.1. Actions in emergency/urgency situations at the cardiovascular level. III.2. Action in case of cardiorespiratory arrest. Cardiopulmonary resuscitation protocol.

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	1	0	1
Lecturing	21	64	85
Collaborative Learning	4	4	8
Previous studies	0	4	4
Debate	1	1	2
Case studies	2	0	2
Laboratory practical	10	24	34

Problem solving	2	2	4
Autonomous problem solving	0	2	2
Mentored work	0	4	4
Presentation	1	0	1
Portfolio / dossier	0	2	2
Systematic observation	1	0	1

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

Methodologies	
	Description
Introductory activities	Activities aimed at making contact and gathering information about students, as well as presenting the subject.
Lecturing	Presentation by the teacher of the contents on the subject object of study, theoretical bases and / or guidelines of a work, exercise that the student has to develop.
Collaborative Learning	It includes a group of teaching procedures that start from the organization of the class in small mixed and heterogeneous groups where the students work in a coordinated way with each other to develop academic tasks and delve into their own learning.
Previous studies	Search, reading and work of documentation, previous to the classes or practices of laboratory, that realizes the alumnado of autonomous form.
Debate	Open talk between a group of students. You can focus on a topic of the contents of the subject, the analysis of a case, the result of a project, exercise or problem previously developed in a master session ...
Case studies	Analysis of a real fact, problem or event in order to know it, interpret it, solve it, generate hypotheses, test data, reflect, complete knowledge, diagnose it and train in alternative solution procedures.
Laboratory practical	Activities of application of the knowledge to concrete situations and of acquisition of basic and procedural abilities related to the matter object of study. They are developed in special spaces with specialized equipment (Laboratories, computer rooms, etc ...)
Problem solving	Activity in which problems and / or exercises related to the subject are formulated. The student must develop the appropriate or correct solutions through the exercise of routines, the application of formulas or algorithms, the application of procedures for the transformation of available information and the interpretation of results. It is usually used as a complement to the master class.
Autonomous problem solving	Activity in which problems and / or exercises related to the subject are formulated. The student must develop the analysis and resolution of problems and / or exercises independently.
Mentored work	The student, individually or in groups, prepares a document on the subject or prepares seminars, research, reports, essays, summaries of readings, lectures, etc.

Personalized assistance	
Methodologies	**Description**
Lecturing	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.
Debate	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.
Case studies	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.
Collaborative Learning	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.
Laboratory practical	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.

Problem solving	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.
Autonomous problem solving	In addition to the attention to students in the established tutorials and depending on the topic to be dealt with, students will also be attended through email and the remote campus platform (online) at the times available and agreed by both parties. Personalized attention will aim to answer any questions that may arise regarding the subject and/or advise on academic and professional matters in those cases that so request.

Assessment

	Description	Qualification	Training and Learning Results			
Case studies	Analysis of a fact, problem or real event in order to know it, interpret it, solve it, generate hypotheses, compare data, reflect, complete knowledge, diagnose it and train in alternative solution procedures. Learning outcomes: RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9, RA10	30	A2 A5	B1 B4	C6 C9 C16 C19 C20 C21 C24	D1 D2
Problem solving	Prueba en la que el alumno debe resolver una serie de problemas y/o ejercicios en uno tiempo/condiciones establecidas por el profesor. De esta manera, los estudiantes deben aplicar la conocimientos que has adquirido. Resultados de aprendizaje: RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9, RA10.	30	A2 A5	B1 B4	C6 C9 C16 C19 C20 C21 C24	D1 D2
Mentored work	Students in small groups prepare a document on a relevant and interesting topic related to the subject. Learning outcomes: LO4, LO5, LO6, LOA7.	5	A2 A5	B1 B4	C16 C19 C20 C21 C24	D1 D2
Presentation	Presentation and defense of the supervised work will be valued. Learning outcomes: LO11	5	A2			D1 D2
Portfolio / dossier	Compilation of the student's work in the practices with the aim of showing their effort, progress and achievements in their learning. Students will collect information and data in the practices that they will expand with documentation and information on which they will reflect, solving the questions raised in the practice. Learning results: RA6,RA7, RA,8, RA9, RA10, RA11.	20	A2		C6 C9 C16 C19 C20 C21 C24	D1 D2
Systematic observation	Learning and actions will be evaluated and how they are carried out, assessing order, precision, skill, effectiveness, active participation, etc. Learning outcomes: RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9, RA10, RA11.	10	A2 A5	B1 B4	C6 C9 C16 C19 C20 C21 C24	D1 D2

Other comments on the Evaluation

Two evaluation systems are established for the first opportunity: continuous evaluation and global evaluation. The default evaluation of each student, in the first opportunity of this subject, is the continuous evaluation.

In order for a student to be eligible for the overall assessment of this subject at the first opportunity, they must renounce the continuous assessment system for this subject and adhere to the overall assessment system for this subject, in accordance with the procedure and deadlines established by the center.

The evaluation of each student, in the second opportunity and in the final call for this subject, will be carried out by means of a global evaluation.

Continuous assessment:

The continuous evaluation will be carried out through different activities that must be carried out within the deadlines established at the beginning of the teaching and that will be published on the moovi platform. In the presentation of the subject, all the information related to the continuous evaluation will be detailed. It is the student's obligation to collect all the

necessary information to be able to follow the continuous evaluation in accordance with the instructions given by the teacher at the beginning of the subject.

Continuous evaluation will be carried out through the following activities:

- Practical case (30%): It will consist of different activities related to the theoretical and practical contents of the subject.

- Problem solving (30%): It will consist of different activities related to the theoretical and practical contents of the subject.

- Portfolio/file (20%): students will deliver a portfolio in which they will make a record of the practice as well as the interpretation of the information collected and will add/complete it with the related documentation, in addition to answering and reflecting on issues raised in the practice.

- Systematic observation (10%): Active participation in class and through the forums set up on the moovi platform will be valued. The degree of contribution made in each case and its relevance will be taken into account.

- Elaboration of the theme work - manuscript - (5%)

- Presentation and defense of the work of the subject (5%)

General evaluation:

The official exam dates are published on the center's website http://fisioterapia.uvigo.es/gl/ and on the subject's moovi platform https://moovi.uvigo.gal/.

Theoretical contents:

- Theoretical exam (40%): The theoretical exam will consist of 5 development questions related to the theoretical content of the subject.

Practical contents:

- Laboratory practices (20%): In the practical test, the student must perform and interpret different tests/cardiovascular evaluation tests.

- Practical case (40%): in the exam the student must explain the meaning and perform a clinical interpretation of the data from a cardiac assessment as well as design an exercise program adjusted to the assessment of a clinical case for a training program. Cardiac Rehabilitation.

To pass the subject it is necessary to pass the theoretical exam (minimum score of 5 on the scale from 0 to 10) and the case study (minimum score of 5 on the scale from 0 to 10) separately.

Considerations:

Students taking this course are required to conduct themselves in a responsible and honest manner. Any form of fraud (that is, copying and/or plagiarism) tending to falsify the level of knowledge or ability reached by a student in any type of test, report or work designed for that purpose is considered inadmissible. Fraudulent conduct may result in suspension from the course for the entire course. An internal record of these actions will be kept so that, in the event of recidivism, the rectory is asked to open a disciplinary file.

Ethical commitment:

Students must display appropriate ethical behavior. In the case of unethical conduct (copying of seminars, plagiarism of work, use of unauthorized electronic equipment, etc.) that prevents the correct development of the teaching activity, it will be considered that the student does not meet the necessary requirements to pass the subject. . . subject, and in this case your grade will be suspended in the current academic year (0.0). The use of any electronic device will not be allowed during the evaluation tests unless expressly authorized. The fact of introducing an unauthorized electronic device into the examination room will be considered a reason for the suspension of the subject in the current academic year and the overall mark (0.0) will be suspended.

Image and/or audio recording: it will not be allowed, except with the express authorization of the teacher, the recording, total or partial, both sound and image, of master classes, seminars or practices of the subject, in accordance with the provisions of the Intellectual Norms. Heritage Law, Organic Law on Protection of Personal Data and Organic Law on Civil Protection of the Right to Honor.

Sources of information

Basic Bibliography

American College of Sports Medicine, **Manual ACSM para valoración y prescripción del ejercicio**, 2, Paidotribo, 2007
Juan Salvador Espinosa, **Rehabilitación Cardiaca y Atención primaria**, 1, Panamericana, 2002
Jesus Seco, **Sistema Cardiovascular Métodos, fisioterapia clínica y afecciones para fisioterapeutas**, 1, Panamericana, 2018

Complementary Bibliography

Antoni Bayes de Luna, **Cardiología Clínica**, 1, Masson, 2002
Ricardo Serra Grime, **Prescripción de ejercicio físico para la salud**, 1, Paidotribo, 2004
Sociedad Española de Cardiologia, **Revista Española de Cardiología online**, www.revespcardiol.org,
Frank G. Yanowitz; Paul S. Fardy, **Rehabilitación Cardíaca. La forma física del adulto y las pruebas de esfuerzo**, 1, Paidotribo, 2003
Paul S. Fardy, **Insuficiencia Cardiaca**, 1, Panamericana, 2007
Juan Jose Rufilanchas Sanchez; Eduardo Otero Coto, **Riesgo y complicaciones de Cirugía Cardiaca**, 1, Panamericana, 2004
Josef Niebauer, **Cardiac Rehabilitation Manual**, 1, Springer, 2011
Julian Bath, Gail Bohin, Christine Jones, Eve Scarle, **Cardiac Rehabilitation: A Workbook for use with Group Programmes**, 1, Wiley, 2009
American Association of Cardiovascular & Pulmonary Rehabilitation, **AACVPR Cardiac Rehabilitation Resource Manual**, 1, Human Kinetics, 2006
Peter L. Thompson, **Coronary Care**, 2, Elselvier, 2011
Nathan Wong, Ezra Amsterdam, **ASPC Manual of Preventive Cardiology**, 1, Demosmedical, 2015

Recommendations

Subjects that it is recommended to have taken before

Human anatomy: Medical-surgical conditions/P05G171V01107
Human anatomy: Human anatomy/P05G171V01101
Physiology: Human physiology/P05G171V01102
Human anatomy: Medical conditions/P05G171V01201
Human anatomy: Surgical conditions/P05G171V01202
Kinesitherapy/P05G171V01203
Cardiorespiratory Physical Therapy/P05G171V01302