

Academic Year/course: 2022/23

## 25654 - Physiotherapy in Pneumology and Cardiology

### Syllabus Information

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**Academic Year:** 2022/23

**Subject:** 25654 - Physiotherapy in Pneumology and Cardiology

**Faculty / School:** 127 - Facultad de Ciencias de la Salud

**Degree:** 605 - Degree in Physiotherapy

**ECTS:** 6.0

**Year:** 3

**Semester:** Second semester

**Subject Type:** Compulsory

**Module:**

## 1. General information

### 1.1. Aims of the course

The general aim of this course is that the student, from the knowledge of its contents, is able to:

- Explain the physiological and therapeutic effects of exercise in the most common heart diseases.
- Prescribe, design and apply an exercise program for the most common heart diseases within a Cardiac Rehabilitation program or in a clinical therapeutic context.
- Know, understand and develop cardiovascular prevention strategies.
- Explain the physiological and therapeutic effects of respiratory physiotherapy procedures and therapeutic exercise in the most frequent respiratory pathologies.
- Prescribe, design and apply a respiratory physiotherapy intervention for the most frequent respiratory pathologies.
- Know, understand and develop prevention strategies for respiratory pathology.
- Integrate patient evaluation and the different physiotherapeutic procedures acquired in the most relevant cardiac and respiratory clinical pathologies.

These approaches and targets are aligned and in accordance with the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (<https://www.un.org/sustainabledevelopment/es/>). In a cross-cutting and implicit way almost all of them are present in the subject but we emphasize some of special relevance in such a way that the acquisition of the learning outcomes of the subject provides training and competence to contribute to some extent to their achievement.

Goal 1: End poverty in all its forms everywhere.

In many cardiac and respiratory pathologies the social and economic component is a risk factor for these pathologies. The course analyses these risk factors in relation to poverty.

Goal 3: Ensure healthy lives and promote well-being for all at all ages.

Factors such as diet, physical activity, sedentary lifestyles and hobbies define to a large extent the primary prevention of many pathologies. Also, it is only by means of a therapeutic exercise programme that we will be able to improve many cardiac and respiratory pathologies. The course will encourage the physiotherapist to be a dynamic agent of this healthy lifestyle for his patients and for himself.

### 1.2. Context and importance of this course in the degree

This subject is related to the following subjects: Human Anatomy I and II, Human Physiology, Assessment and Diagnosis in Physiotherapy I and II, General Pathology in Physiotherapy, Medical and Surgical Conditions, General Intervention Procedures in Physiotherapy I and II, and Physiotherapy Methods in Respiratory and Cardiovascular Processes.

This is a basic subject in the second semester of the third year in which the integration of specific methods of intervention in cardiovascular and respiratory physiotherapy in different clinical situations will be addressed.

Its purpose is twofold: it aims to introduce students to the scientific/technical knowledge of the profession and, on the other hand, it aims to bring together and consolidate certain competences with the aforementioned subjects.

### 1.3. Recommendations to take this course

The prior acquisition and continuous revision of the contents of the subjects Human Anatomy I and II, Human Physiology, Assessment and Diagnosis in Physiotherapy I and II, General Pathology in Physiotherapy, Medical and Surgical Conditions,

General Intervention Procedures in Physiotherapy I and II, and Physiotherapy Methods in Respiratory and Cardiovascular Processes, facilitates the acquisition of competences, knowledge and skills specifically developed in this subject.

## 2. Learning goals

### 2.1. Competences

The general competences covered in this subject are:

CG03 - Knowing and understanding the physiotherapeutic methods, procedures and actions, aimed both at the actual therapy to be applied in the clinic for functional re-education or recovery, and at carrying out activities aimed at the promotion and maintenance of health.

CG05 - Assess the functional state of the patient, considering physical, psychological and social aspects.

GC06 - Carry out a diagnostic assessment of physiotherapy care according to internationally recognised validation standards and instruments.

GC07 - Design the physiotherapy intervention plan according to criteria of suitability, validity and efficiency.

GC08 - Execute, direct and coordinate the physiotherapy intervention plan, using the appropriate therapeutic tools and attending to the individuality of the user.

GC09 - Evaluate the evolution of the results obtained with the treatment in relation to the objectives set.

GC10 - Draw up the discharge report for patients in physiotherapy once the proposed objectives have been met.

GC11 - Provide effective physiotherapy care, providing comprehensive assistance to patients.

GC17 - Understand the importance of updating the knowledge, skills, abilities and attitudes that make up the professional competences of the physiotherapist.

GC19 - Communicate effectively and clearly, both orally and in writing, with users of the health system as well as with other professionals.

The specific competences covered in this subject are:

CE09 - Knowing the physiological and structural changes that can be produced as a consequence of the application of physiotherapy.

CE12 - Identify the changes produced as a consequence of physiotherapy intervention.

SC17 - Know and apply the theoretical bases and the development of physiotherapy methods and procedures.

SC18 - Have the ability to assess, from a physiotherapy perspective, the functional state of the patient/user, considering the physical, psychological and social aspects of the same.

SC19 - Understand and apply manual and instrumental assessment methods and procedures in Physiotherapy and Physical Rehabilitation, as well as the scientific evaluation of their usefulness and effectiveness.

SC23 - Identify the most appropriate physiotherapeutic treatment in the different processes of alteration, prevention and promotion of health, as well as in the processes of growth and development.

SC24 - 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 health science professionals.

SC25 - Know and apply good clinical practice guidelines.

SC31 - Analyse, programme and apply movement as a therapeutic measure, promoting the participation of the patient/user in the process.

SC37 - Know and apply quality mechanisms in physiotherapy practice, adjusting to recognised and validated quality criteria, indicators and standards for appropriate professional practice.

The transversal competences covered in this subject are:

CT01 - Ability to apply critical reasoning.

CT02 - Capacity for analysis and synthesis.

CT03 - Ability to assume ethical commitment.

CT04 - Ability to recognise diversity and multiculturalism.

CT05 - Ability to work on the basis of quality criteria.

CT06 - Ability to develop creativity.

CT07 - Ability to develop initiatives and entrepreneurial spirit.

CT09 - Ability to plan and evaluate.

CT10 - Ability to use computer media and new technologies appropriately.

CT12 - Ability to develop information management skills.

CT13 - Capacity for criticism and self-criticism.

### 2.2. Learning goals

In order to pass this subject, the student must demonstrate the following results:

Explain, reason and understand the concept and theoretical bases of clinical reasoning in pneumology and cardiology.

Establishes the physiotherapy diagnosis through anamnesis, physical examination, functional assessment and complementary tests in pneumology and cardiology.

Is able to perform and interpret complementary functional tests in pneumology and cardiology.

Describes and prescribes a physiotherapy intervention plan in pneumology and cardiology according to scientific evidence.

### **2.3. Importance of learning goals**

The methods of assessment, diagnosis and physiotherapy treatment in cardiac and respiratory pathology will be integrated. Furthermore, all of this will be done with an emphasis on clinical and scientific evidence.

## **3. Assessment (1st and 2nd call)**

### **3.1. Assessment tasks (description of tasks, marking system and assessment criteria)**

The assessment system will be as follows:

Theory exam 50%.

Practical evaluation 30%.

Presentation and defence of the clinical case 20%.

The student must demonstrate that he/she has achieved the expected learning outcomes through the following assessment activities:

**Theoretical exam.** Completion of an objective multiple-choice test on all the content of the subject (theoretical, practical and problems and cases). The grade for this test will account for 50% of the final mark. The basic formula for objective tests will be applied. Exam mark = correct answers - (errors/n-1).

**Practical assessment.** There will be a practical exam on the skills and abilities developed in the laboratory practicals. Participation and involvement in the practical sessions of the course will also be continuously assessed. The grade for the practical exam will account for 20% of the final mark and the continuous assessment of the practicals will account for 10% of the final mark.

**Preparation and defence of a simulated clinical case (pneumology or cardiology)** that includes the whole physiotherapy intervention method. The sections of the clinical case will be:

Introduction, identification of the study problem and description of the pathology and clinic.

Description of the case.

Initial assessment.

Physiotherapy diagnosis.

Therapeutic objectives.

Intervention.

Results.

Discussion.

The work will be group work and the presentation will be 25 minutes per group plus 5 minutes for questions.

The final mark for the course will be the average of all the partial marks. A minimum of 4.5 out of 10 is required for each part separately in order to be able to mediate.

For those students who have not attended 80% of the practical classes, there will be a written exam on a clinical case. For those students who do not pass the presentation of the clinical case, the exam in the following sessions will be through the resolution of a clinical case individually. The assessment tests will be carried out in the classroom mode. In the event of special conditions, and if instructions are received from the academic authorities, the tests will be carried out in a non-face-to-face mode using the online resources of the University of Zaragoza, which will be notified with due notice.

## **4. Methodology, learning tasks, syllabus and resources**

### **4.1. Methodological overview**

The teaching of the subject Physiotherapy in Pneumology and Cardiology combines theory classes in a single group, problem solving and case studies and practical laboratory classes with the preparation of a clinical case and the student's personal study. Class material will be available on Moodle.

## 4.2. Learning tasks

Participative lectures (10 hours).

In these classes the student must understand and assimilate the information presented by the teacher and participatory models will also be established with the student on the content presented. These classes will take place in person.

Practical laboratory classes (45 hours).

They will be carried out in 4 groups. In these practical classes, students focus their learning mainly on two parts, on the technical content and on the understanding of a clinical reasoning model. Students are arranged in pairs where one of them simulates being a patient and the other a physiotherapist and they put into practice the therapeutic methods and clinical reasoning explained.

Seminars on problem solving and case studies (5 hours).

These will be carried out in 2 groups. A presentation, analysis and discussion of various clinical cases and actions considering the evidence shown in the clinical guides is established.

Personal and group work (90 hours).

90 hours have been assigned for the work that the student must develop to pass the course, including hours of study, training of skills and abilities and tutorials. The student will also have to develop a real or virtual clinical case on physiotherapy intervention in pneumology and cardiology. In this activity the student must present and analyse a physiotherapy intervention model according to the principles described in the problems and cases. It will not be evaluated, but it is recommended, the elaboration of an individual practice notebook on the content of the laboratory practices.

## 4.3. Syllabus

### RESPIRATORY PHYSIOTHERAPY

Process of physiotherapy intervention in patients with obstructive pathology (COPD).

Process of physiotherapy intervention in patients with restrictive pathology.

Process of physiotherapy intervention in paediatric respiratory patients.

Process of physiotherapy intervention in patients with respiratory pathology risk factors.

Process of physiotherapy intervention in patients with chest surgery and/or in ICU.

Process of physiotherapy intervention in geriatric and sports patients with pneumological pathology.

Complementary tests in pneumology.

OVACE intervention techniques.

### CARDIOVASCULAR PHYSIOTHERAPY

Process of physiotherapy intervention in patients with cardiovascular conditions: coronary heart disease, heart failure, heart transplants, valve replacements.

Process of physiotherapy intervention in patients with venous insufficiencies and peripheral arteriopathies.

Process of physiotherapy intervention in patients with vascular amputations.

Process of physiotherapy intervention in patients with acute myocardial infarction and coronary revascularisation surgery.

Process of physiotherapy intervention in patients with cardiovascular risk factors.

Complementary tests in cardiology.

Basic CPR with AED.

## 4.4. Course planning and calendar

Planning available in the timetables published by the centre on the website and on the notice board. It is also published on Moodle in the course presentation file.

Theoretical face-to-face classes in a single group (10 hours)

Practical laboratory classes (45 hours)

Seminars for problem solving and case studies (5 hours).

The key dates are indicative:

Clinical case presentation: May.

Theoretical and practical exam: May/July (official call).

The planned face-to-face learning activities will be carried out in the classrooms and rooms designated by the Centre. If the conditions change, and if instructions are received from the academic authorities, the activities will be modified and adapted to be carried out in non-face-to-face mode using the online resources of the University of Zaragoza, which will be notified with due notice.

#### **4.5. Bibliography and recommended resources**

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=25654>