

Cardio-respiratory Physiology

Code: 102974
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	1

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Patricia Launois
Alba Gomez Garrido

Prerequisites

Students of medical sciences (physiotherapy, nursing,...)

Basic knowledge of anatomy, histology and physics, to understand the cardiorespiratory function in both, healthy people and people with cardiorespiratory pathology.

Basic knowledge of English and the main search engines / scientific journals to carry out bibliographical research, if applicable.

Objectives and Contextualisation

Know the physiology and cardiorespiratory anatomy. Know the physiology during the exercise.

Basic notions of cardiorespiratory pathology (obstruction, restriction, myopericarditis,...)

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Display critical reasoning skills.
- Display knowledge of the morphology, physiology, pathology and conduct of both healthy and sick people, in the natural and social environment.
- Display knowledge of the physiotherapy methods, procedures and interventions in clinical therapeutics.
- Integrate, through clinical experience, the ethical and professional values, knowledge, skills and attitudes of physiotherapy, in order to resolve specific clinical cases in the hospital and non-hospital environments, and primary and community care.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.

- Show sensitivity to environmental issues.
- Solve problems.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Work in teams.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Apply the specific methods and techniques for chest diseases.
3. Communicate using language that is not sexist.
4. Consider how gender stereotypes and roles impinge on the exercise of the profession.
5. Critically analyse the principles, values and procedures that govern the exercise of the profession.
6. Display critical reasoning skills.
7. Explain in detail the physiopathology of chest diseases.
8. Explain the explicit or implicit code of practice of one's own area of knowledge.
9. Identify situations in which a change or improvement is needed.
10. Identify the principal forms of sex- or gender-based inequality present in society.
11. Identify the social, economic and environmental implications of academic and professional activities within one's own area of knowledge.
12. Propose new methods or well-founded alternative solutions.
13. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
14. Propose projects and actions that incorporate the gender perspective.
15. Propose viable projects and actions to boost social, economic and environmental benefits.
16. Propose ways to evaluate projects and actions for improving sustainability.
17. Show sensitivity to environmental issues.
18. Solve problems.
19. Use physiotherapy to treat clinical cases involving chest pathologies.
20. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
21. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.
22. Work in teams.

Content

RESPIRATORY SYSTEM

- Structure and function of the respiratory system (anatomy, histology, function): airway, lung, pleura, chest and respiratory muscles, pulmonary circulation and innervation.
- Respiratory mechanics.
- Pulmonary and peripheral gas exchange.
- Respiratory pathology: respiratory failure / ARDS, COPD, asthma, interstitial pathology, PE, SAHS, neuromuscular diseases.

CARDIOVASCULAR SYSTEM

- Structure and function of the cardiovascular system (anatomy, histology, function): heart, coronary circulation, regional circulation.
- Cardiac mechanics.
- Cardiac pathology: heart failure, myocardial infarction, cardiomyopathies, myopericarditis, vessel pathology.

EXERCISE PHYSIOLOGY

- Energy sources during the exercise.
- Response and cardiocirculatory and respiratory adaptations during exercise.
- Power, aerobic capacity and anaerobic functional capacity.
- Physiology of training.
- Physiology of training in special populations.
- Effort training programs
- Basic notions and interpretation of the cardiopulmonary stress test.

Methodology

The teaching combines master classes, clinical case seminars and practices in the respiratory function laboratory.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Clinical Case Seminars (SCC)	5	0.2	19, 2, 17, 7, 6, 18, 22
Laboratory Practices (PLAB)	15.5	0.62	19, 2, 17, 7, 6, 18, 22
Theory (TE)	20	0.8	19, 2, 17, 7, 6, 18, 22
Type: Autonomous			
Self- Study	101	4.04	19, 2, 17, 7, 6, 18, 22

Assessment

The evaluation will be done through oral defense of written works and multiple choice questions (each correct answer will add 1 point, each wrong answer will subtract 0.25); the required grade to pass will be 5 out of 10. To access the exam and, therefore, to pass the course you must attend at least 80% of the classes. The evaluation of exchange students will be the same as that of the rest of the students of the UAB.

According to article 116.8, when it is considered that the student has not been able to provide sufficient evidence of evaluation in the record, this subject will be recorded as non-assessable.

Students who have not passed the subject / module through continuous assessment may be submitted to a recovery exam

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
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Leveling Test	0%	0.5	0.02	1, 19, 11, 9, 16, 12, 13, 15, 6
Objective tests of selection of multiple choice items.	50%	2	0.08	5, 1, 19, 2, 3, 17, 7, 8, 11, 10, 9, 21, 16, 12, 13, 14, 15, 6, 18, 22, 4, 20
Seminar	25%	3	0.12	5, 1, 19, 2, 3, 17, 7, 8, 11, 10, 9, 21, 16, 12, 13, 14, 15, 6, 18, 22, 4, 20
Seminar	25%	3	0.12	5, 1, 19, 2, 3, 17, 7, 8, 11, 10, 9, 21, 16, 12, 13, 14, 15, 6, 18, 22, 4, 20

Bibliography

- *Función pulmonar aplicada*. A.GN. Agustí. Mosby/Doyma Libros SA, 1995.
- *Fisiología respiratoria*. West. 7ª edición. Editorial Médica Panamericana.
- *Respiratory Physiology, a clinical approximation*. R. M. Schwartzstein. Lippincott Williams and Wilkins.
- *Fisiología Humana*. J. A. Tresguerres. 3ª edición. Ed. McGraw-Hill Interamericana.
- *Manuales de procedimientos SEPAR*.
- *Indicaciones e interpretación de gasometría*. A. Crespo Giménez, F. J. Garcés Molina, Y. Casillas Viera y J. C. Cano Ballesteros. *Medicine*. 2007; 9 (90): 5813-5816.

Software

PowerPoint

Adobe Acrobat

Teams

Microsoft Word

Kahoot