Universitat Autònoma de Barcelona

2020/2021

Cardio-respiratory Physiology

Code: 102974
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

Name: Patricia Launois
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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

External teachers

Adria Marco
Antonieta Falco
Gonzalo Ballesteros

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

- Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
- Develop independent learning strategies
- 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.
- Show sensitivity to environmental issues.
- Solve problems.
- Work in teams.

Learning Outcomes

1. Apply the specific methods and techniques for chest diseases.
2. Develop critical thinking and reasoning and communicate ideas effectively, both in the mother tongue and in other languages.
3. Develop independent learning strategies
4. Display critical reasoning skills.
5. Explain in detail the physiopathology of chest diseases.
6. Show sensitivity to environmental issues.
7. Solve problems.
8. Use physiotherapy to treat clinical cases involving chest pathologies.
9. 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.

- The muscle and it's strenght.

- Basic notions and interpretation of the cariopulmonary stress test.

- Response and cardiocirculatory and respiratory adaptations during exercise.

- Power, aerobic capacity and anaerobic functional capacity.

- Physiology of training.

Methodology

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

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Clinical Case Seminars (SCC)	5	0.2	8, 1, 6, 3, 2, 5, 4, 7, 9
Laboratory Practices (PLAB)	15.5	0.62	8, 1, 6, 3, 2, 5, 4, 7, 9
Theory (TE)	20	0.8	8, 1, 6, 3, 2, 5, 4, 7, 9
Type: Autonomous			
Self- Study	101	4.04	8, 1, 6, 3, 2, 5, 4, 7, 9

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
Leveling Test	0%	0.5	0.02	8, 3, 2, 4
Objective tests of selection of multiple choice items.	50%	2	0.08	8, 1, 6, 3, 2, 5, 4, 7, 9
Seminar	25%	3	0.12	8, 1, 6, 3, 2, 5, 4, 7
Seminar	25%	3	0.12	8, 1, 6, 3, 2, 5, 4, 7, 9

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.