

COURSE OUTLINE
PULMONARY AND CARDIOVASCULAR REHABILITATION (MP23)

1. GENERAL

SCHOOL	School of Health Sciences		
DEPARTMENT	Physiotherapy		
LEVEL OF EDUCATION	Postgraduate		
COURSE CODE	MP23	SEMESTER OF STUDY	B
COURSE TITLE	Pulmonary and Cardiovascular Rehabilitation		
SELF-ENDED TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDIT UNITS	
<i>Theory + Exercise tutorials</i>	2 + 1	7	
<i>Laboratory</i>			
COURSE TYPE	Special Background		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek/English		
ERASMUS STUDENTS	NO		
ECLASS COURSE CODE	PHYSIO P 108		
COURSE RESPONSIBLE	Dr. Eleni A. Kortianou, Associate Professor		
PHONE/ EMAIL	2231060246/ ekortianou@uth.gr		

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2. LEARNING OUTCOMES

Learning results	
Upon successful completion of the course, the student will be able to:	
<ol style="list-style-type: none"> 1) Demonstrates understanding and knowledge that underpins, extends and/or enhances knowledge associated with the management of pulmonary and cardiovascular disease 2) Integrates knowledge and formulates decisions based on clinical reasoning. 3) Apply knowledge to solve problems in new environments, in the context of wider interdisciplinary working conditions related to pulmonary and cardiovascular rehabilitation. 4) Critically discusses the theories and current practices in the rehabilitation of chronic pulmonary and cardiovascular patients. 5) Designs an individualized exercise program for the patient in pulmonary and/or cardiovascular rehabilitation according to the physical ability of each patient and their particular psycho-economic-social needs. 6) Develops skills and advanced practice to promote effective service delivery in organized pulmonary and/or cardiovascular rehabilitation programs based on evidence-based new knowledge. 	
General & Special Skills	
<p>The course aims to develop the following general skills:</p> <ul style="list-style-type: none"> • Search, analyze and synthesize data and information related to the individual's pathology • Decision making 	<p>The course aims to develop the following specific skills:</p> <ul style="list-style-type: none"> • Ability to criticize the content of knowledge • Ability to apply scientific knowledge and research in clinical practice • Communication skills with rehabilitation

- Autonomous work
 - Teamwork
 - Generating new research ideas
 - Exercise criticism and self-criticism
 - Promotion of free, creative and inductive thinking
- interdisciplinary team members and patient communication skills

3. COURSE CONTENT

1. Physiology and Pathophysiology of Respiration. Assessment of respiratory function. Respiratory indices.
2. Acid-base balance. Respiratory failure. Pulmonary hypertrophy. Respiratory patterns
3. Pathophysiology of respiratory and skeletal muscle damage in chronic pulmonary and cardiovascular diseases. Examination of the maximum capacity for exercise (ergospirometry). Submaximal evaluation tests in chronic lung diseases (flow and functional tests). Diagnostic properties of maximal and submaximal tests in pulmonary limitations.
4. Cardiovascular Physiology. Assessment of cardiovascular function. Diseases of the cardiovascular system. Introduction to Cardiovascular Rehabilitation.
5. Primary prevention of cardiovascular diseases. CHD risk factors. Predictive classification. Assessment of biomarkers in coronary heart disease prevention and cardiovascular rehabilitation.
6. Submaximal assessment tests in chronic cardiovascular diseases. Diagnostic properties of maximal and submaximal tests in patients with heart failure, hypertension, diabetes mellitus
7. Structure and Organization of pulmonary rehabilitation programs. Exercise Physiology. Forms of exercise in COPD, interstitial lung diseases, pulmonary hypertension, cystic fibrosis, bronchiectasis, bronchial asthma. Peculiarities in individual lung diseases.
8. Early recovery in the ICU. The role of HNME and respiratory muscle strengthening in early intervention to preserve muscle mass.
9. In-hospital rehabilitation programs during exacerbations. Details and specifics for pulmonary rehabilitation at home.
10. Structure, organization and prescription of personalized cardiovascular rehabilitation programs. Adaptation of exercise programs to special populations of patients with cardiovascular diseases.
11. Practices in cardiovascular rehabilitation IOM.
12. Tele-rehabilitation and remote assessment and counseling and exercise interventions. Applications and peculiarities in tele -rehabilitation. Telematic monitoring of biomarkers and assessment of the daily clinical picture.
13. Pulmonary Exacerbation Self-Management Programs. Self-Management in Diabetes Mellitus

4. TEACHING AND LEARNING METHODS - ASSESSMENT

METHOD OF TEACHING	Face-to-face, Hybrid education, Distance education at 20%		
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of PC, projector, video , and ICT (eclass, email, MS Teams, google docs) in teaching and communicating with students		
TEACHING ORGANIZATION	Activity	Semester Workload	
	Lectures / Interactive teaching	39	
	Independent Study & article analysis	80	

	Elaboration of work study	20
	Writing assignments	36
	Total Course (25 workload hours per credit unit)	175
STUDENT EVALUATION	<p>The evaluation of the students is carried out in accordance with the regulation of the P.M.S. and the relevant decisions of the Department Assembly as a weighting of their grade in the written exams (65%) and their performance in the individual work (35%). Written exams include Multiple Choice Tests, and Analytical/Combined Answer Questions.</p> <p>Individual work includes: one (1) individual research proposal paper of approximately 3,500-5,000 words. They are submitted through e-class at a predetermined time to be checked for plagiarism by Turnitin plagiarism software. The work is graded by the head of the course as well as by another teacher of the course. The average of their scores constitutes 35% of the final grade for the course.</p>	

5. RECOMMENDED BIBLIOGRAPHY

- Suggested Bibliography:

1. J West (2013) *Physiology of Respiration*. Parisianos Publications , Athens
2. Josef Niebauer (2022) *Cardiovascular Rehabilitation*. Constantaras Publications, Athens
3. Larry DJ and Moore GE. *ACSM's Exercise in chronic diseases and disabilities*. Paschalidis Publications, Athens
4. Nanas S. *Cardiorespiratory fatigue testing and cardiorespiratory rehabilitation programs*. Stamouli Publications, Athens
5. *American Society for Cardiovascular and Pulmonary Rehabilitation. Guidelines for pulmonary rehabilitation programs. Collective Project*. Pedio Publications, Athens
6. Donner Claudio, Goldstein Roger. *Pulmonary Restoration. Collective Project*. Constantaras Publications, Athens
7. *Global Initiative of Chronic Obstructive Lung Disease (GOLD). Global strategy for the diagnosis, management and prevention of chronic obstructive pulmonary diseases (2022). Annually Refreshed Version* <https://goldcopd.org/>
8. AA CVPR (American Association of Cardiovascular and Pulmonary Rehabilitation). *Guidelines for Cardiac Rehabilitation Programs (2022)*. Ekdoseis Broken Hil .

- Related scientific journals:

1. *European Respiratory Journal* <https://erj.ersjournals.com/>
2. *European Respiratory Reviews* <https://erj.ersjournals.com/>
3. *COPD: Journal of Chronic Obstructive Pulmonary Disease* <https://www.tandfonline.com/toc/icop20/current>
4. *Respiratory Care* <https://rc.rcjournal.com/>
5. *J journal of cardiopulmonary rehabilitation and prevention* <https://journals.lww.com/jcrjournal/pages/currenttoc.aspx>
6. *European Journal of Preventive Cardiology* <https://academic.oup.com/eurjpc>
7. *Heart* <https://heart.bmj.com/>
8. *Heart & Lung* <https://www.heartandlung.org/>
9. *Hellenic Journal of Cardiology* <https://www.hellenicjcardiol.com/>