INSTITUTE	**FACULTY OF PHYSIOTHERAPY**
PROGRAM	**MASTER OF PHYSIOTHERAPY**
SEMESTER	**1**
COURSE TITLE	**CLINICAL, PHYSICAL AND FUNCTIONAL DIAGNOSIS IN CARDIO- PULMONARY PHYSIOTHERAPY**
COURSE CODE	**MPT (C)-104**
COURSE CREDITS	**9**

Objective:

1 Elicit and interpret clinical signs and symptoms of cardio-vascular and pulmonary diseases & interpret clinical tests and special investigations commonly used in the diagnosis of conditions.

2 Generate a primary diagnosis and a list of differential diagnoses consistent with typical presentations.

3 Identify normal anatomy on diagnostic images in various cardio-vascular and pulmonary disorders.

4 Identify pathological anatomy on diagnostic images in various cardio-vascular and pulmonary disorders.

Course Outcomes: After completion of this course, student will be able to:

1 Elicit and interpret clinical signs and symptoms of cardio-vascular and pulmonary diseases & interpret clinical tests and special investigations commonly used in the diagnosis of conditions.

2 Generate a primary diagnosis and a list of differential diagnoses consistent with typical presentations.

3 Identify normal anatomy on diagnostic images in various cardio-vascular and pulmonary disorders.

4 Identify pathological anatomy on diagnostic images in various cardio-vascular and pulmonary disorders.

Pre-requisite of course: Students entering this course should have a foundational understanding of cardiovascular anatomy, physiology, cardiorespiratory mechanics, pathology of cardiopulmonary conditions, and basic cardiopulmonary examination skills acquired during the undergraduate physiotherapy program. They should also possess essential knowledge of communication skills, clinical reasoning, and the ability to interpret basic cardiorespiratory findings relevant to physiotherapy practice.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
120	0	120	100	0	0	0	0

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Contents : Unit	Topics	Contact Hours
1	**Part I** ICF conceptual frame work, Importance of assessment & evaluation, Outlines of principles and Methods of evaluation Need and types of Documentation, Critical decision making and selection of outcome measures in cardiopulmonary Physiotherapy , GENERAL: Review of Anatomy, Embryology and Epidemiology of cardio-vascular, pulmonary and lymphatic pulmonary system. , Role of cardio respiratory therapist in patient assessment.Patient clinician interaction and communication with assessment findings. Confidentiality, concern and universal precautions. A detailed and comprehensive cardio-respiratory health history. Assessment standards, common scales, questionnaire indices used for patients with cardio-pulmonary dysfunction. , Detailed assessment of cardio-vascular and pulmonary symptoms (dyspnea, cough, sputum production, hemoptysis, clubbing, cyanosis, chest pain, syncope, fever, night sweating, headaches, altered sensorium, personality changes. , Vital signs assessment Obtaining vital signs, clinical impressions General clinical presentation Temperature Pulse including the peripheral pulses Blood pressure Respiratory rate , Fundamentals of physical examination with diagnosis in cardiovascular and respiratory Physiotherapy. Examination of head and neck Lung topography – thoracic cage landmarks. Examination of Thorax/ pulmonary system. Examination of Precordium/cardiac system Examination of Abdomen Examination of Extremities, Assessment of neonatal and pediatrics patients – new born, critically ill infants, older infants and child, Comprehensive geriatric assessment – age related sensory deficits, cardio-respiratory deficits and diagnostic tests, standard scales and questionnaires used in geriatric assessment, Nutritional assessment of patients with cardio-respiratory diseases, Fitness assessment Anthropometric and biophysical measurement and body composition Flexibility tests and standards Muscle strength and standard Endurance tests and standards Agility tests and coordination tests, Exercise testing and standardization and interpretation TMT protocols- Maximal and submaximal protocols Field protocols Bicycle protocols Step test protocols Six minute walk test Protocols for pediatric and geriatric population, Interpretation and clinical relevance of investigations in cardio- pulmonary Physiotherapy + Clinical laboratory studies – hematology, microbiology, urine analysis, histology, pathology Pulmonary function tests – normal values Spirometry, arterial blood gas analysis and its interpretation in cardio – respiratory Physiotherapy, capnography and pulse oximetry and its relevance in cardio- pulmonary Physiotherapy Clinical application of chest radiograph – chest x-ray, examination, views; computed tomography, magnetic resonance imaging, lung scans - PET scan. Evaluation of chest radiography – clinical and radiographic findings in cardio- pulmonary disorders and its relevance cardio-pulmonary Physiotherapy Laboratory and bedside interpretation of ECG findings – interpretation of normal and abnormal ECGs and its importance in cardio-respiratory physio- therapy and various ECG patterns in cardiac and lung disease Cardio respiratory monitoring in	60

	critically ill patients including patients with artificial airways Ventilator assessment and evaluation of oxygenation in ICU Assessment of cardiac output in ICU Assessment of haemodynamic pressures in ICU Clinical diagnosis in cardio- respiratory disorders in intensive care.	
2	**Part II** Blood flow studies-arteriography, venography, Color Doppler, ANS testing and interpretation used in cardio- respiratory Physiotherapy and edema evaluation and interpretation. , Cardio respiratory assessment and diagnosis of patient on mechanical ventilator and interpretation of graphical forms, weaning modes and indices , Risk factor stratification, disability evaluation with reference to cardio vascular and pulmonary disorders, Psychological evaluation with reference to stress and anxiety in cardio- pulmonary disorders, Evaluation of stress and anxiety using various scales and questionnaires, Outcome measures used in Cardio – vascular and pulmonary Physiotherapy, Cardio-pulmonary Exercise Testing, VO2 max, METs – its importance in calculating energy expenditure and physical activities, Calculating energy expenditure using calorimetry method, various formulae and equations with emphasis on its importance in prescribing exercise in various patient population, Evaluation and diagnosis of sleep and breathing disorders.	60
Total Hours		**120**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical demonstration for applicable topics** Practical demonstration for applicable topics	120
Total Hours		**120**

Textbook :

1 Exercise and Heart, Victor F. Froelicher, Jonathan Myers, Elsevier Saunders, 2014

2 Advances in Cardio-Pulmonary Rehabilitation, Jean Jobin et al., Human Kinetics, 2012

3 Cardio-Pulmonary Physical Therapy: A Guide to Practice, Scot Irvin, Lan Stephen Tecklin, Mosby (Elsevier), 2004

4 Cardio-Pulmonary Rehabilitation: Basic Theory and Application, Frances J. Brannon, Margaret W. Foley, Julie Ann Stars, Lauren M. Saul, F. A. Davis Company, 2010

5 Pulmonary Management in Physical Therapy, Cynthia Coffin Zadai, Churchill Livingstone (Elsevier), 2010

6 Physiotherapy for Respiratory and Cardiac Problems, Barbara A. Webber, Jennifer A. Pryor, Churchill Livingstone (Elsevier), 2009

7 Respiratory Care: A Guide to Clinical Practice (4th ed.), George G. Burton, John E. Hodgin, Jeffrey J. Ward, Lippincott Williams & Wilkins, 2011

8 Cardiovascular Physiology, Robert M. Berne, Matthew N. Levy, Mosby (Elsevier), 2018

Textbook :

9 Respiratory Physiology: The Essentials, John B. West, Lippincott Williams & Wilkins, 2021

10 Macleod's Clinical Examination, Graham Douglas et al., Elsevier, 2020

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
0.00	0.00	35.00	35.00	30.00	0.00

Instructional Method:

1 Demonstration

2 Case-Based Learning (CBL)

3 Simulation-Based Learning

4 Seminars and Student Presentations

5 Interactive lectures