

INSTITUTE	FACULTY OF PHYSIOTHERAPY
PROGRAM	MASTER OF PHYSIOTHERAPY
SEMESTER	2
COURSE TITLE	PHYSIOTHERAPY IN CARDIOPULMONARY SCIENCES-II
COURSE CODE	17MP0211
COURSE CREDITS	6

Objective:

- 1 To have the detailed knowledge of cardiac and respiratory systems including anatomy, physiology, pathological aspect, causes, medical and surgical interventions.
- 2 To have in-depth concept on Physiotherapy assessment and management with recent advances for cardiopulmonary conditions.

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

- 1 Develop skills in managing acute cardiopulmonary conditions, including postoperative care following cardiothoracic surgery, early mobilization in ICU, and optimizing ventilation and oxygenation in critically ill patients.
- 2 Enable to design individualized exercise programs that enhance aerobic capacity, muscle strength, and functional endurance for patients with cardiopulmonary conditions.
- 3 Enable to integrate evidence-based practices into the management of cardiopulmonary conditions, ensuring that treatment protocols align with the latest clinical guidelines.
- 4 Familiarity with innovative technologies such as tele-rehabilitation for remote management of cardiopulmonary patients, wearable devices for monitoring vital signs during exercise, and mobile health apps for patient engagement.
- 5 Enable to UnderstandS the use of advanced modalities such as inspiratory muscle training devices, non-invasive ventilation (NIV), and oxygen therapy to enhance patient outcomes in cardiopulmonary rehabilitation.

Pre-requisite of course: Thorough knowledge and skills in physiotherapy assessment and management with advance techniques for cardiopulmonary conditions.

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	2	50	30	20	50	50

Contents : Unit	Topics	Contact Hours
1	Respiratory Conditions Causes, clinical features, pathophysiology, general investigation, Medical and surgical management of the below mentioned conditions, Obstructive lung disease: Asthma, Chronic bronchitis, emphysema, Bronchiectasis, Cystic fibrosis, etc., Restrictive lung disease: Atelectasis, pneumonia, Pleural effusion, Pneumothorax, Suppurative lung diseases like lung abscess, etc., Occupational lung diseases-occupational asthma, inhalation injuries, etc, Chest trauma , Chest wall deformities g. Lung cancers , Pediatric/Neonatal Pulmonary diseases, Respiratory failure	5
2	Cardio Vascular Conditions Causes, clinical features, pathophysiology, general investigation, Medical and surgical management of the below mentioned conditions, Pediatric Cardio-vascular disorder: Fallot's tetralogy, Co-arctation of aorta, Patent ductus arteriosus, Arterial septal defect, ventricular septal defect, Transposition of great vessels, Acquired heart diseases: Coronary Artery Diseases, Cardiac arrhythmias, Valvular heart diseases, Cardiomyopathies, Myocardial infarction , Hypertension and diabetes , Diseases of the myocardium , Pericardial diseases , Tumors of the heart , Peripheral vascular diseases: Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins, Cardiac arrest	5
3	Physiotherapy Interventions in Cardio-Pulmonary Conditions Cardio respiratory physiotherapy management principles, pre and post surgical intervention including critical care	10
4	Cardio-Respiratory physiotherapeutic techniques in adult and pediatric To improve lung volumes , To decrease work of breathing , To clear secretions , To Increase exercise tolerance , To improve ventilation and gas exchange , To Improve ADL demands	10
5	Pulmonary conditions Physiotherapy management in Obstructive and Restrictive lung diseases, Post operative management of Respiratory conditions , Adjuncts to chest PT, Lung transplantation	15
6	Cardiac conditions Post operative management of cardiac conditions PT management in acquired and congenital heart diseases , Cardiac rehabilitation, CPR Physiotherapy management in Obstructive and Restrictive lung diseases, Cardiac transplantation	15
7	PT management in Peripheral vascular diseases PT management in Peripheral vascular diseases	8

Contents : Unit	Topics	Contact Hours
8	ICU management Intensive care unit Intensive care unit: concept and set up, equipments for advanced methods of resuscitation, monitoring and patient management, Artificial airways, ventilators, pulse oximetry, O2 therapy , PT management in ICU , Transfer and turning of patient Common complications in ICU PICU and NICU management	10
9	Importance of pharmacological and surgical interventions Respiratory and cardiology pharmacology in brief, Surgical interventions in brief: Cardio-Respiratory and Peripheral	2
Total Hours		80

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Practicals/ OPD/ Case Presentation Practicals/OPD/Case presentation	80
Total Hours		80

Textbook :

- 1 Principles and Practice of Cardiopulmonary Physical Therapy, Donna Frownfelter, Mosby publications, 1987
- 2 Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs Fifth Edition , Walter R. Thompson, Wolters Kluwer, 1995
- 3 Cash Textbook of Chest, Heart and Vascular Disorders for Physiotherapists Cash Textbook of Chest, Heart and Vascular Disorders for Physiotherapists, John . E . Cash, Jaypee Brothers , 1987

References:

- 1 Physical Rehabilitation, Physical Rehabilitation, Susan Sullivan , F.A.DAVIS company, 2014
- 2 Cardio Vascular And Pulmonary Physical Therapy , Cardio Vascular And Pulmonary Physical Therapy , Joanne Watchiee, Elsevier, 2010

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 and evaluation					
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 THEORY + PRACTICAL

Supplementary Resources:

- 1 NA