

Branch Name:	Bachelor of Physiotherapy
Program Code:	PT101
Course Title:	Physiotherapy in Cardio Respiratory & Physiotherapy in Medical Surgical Conditions
Course Code:	2PT1010403
Pre-requisite Course:	Human Anatomy, Kinesiology, Exercise Therapy I & II , Surgery

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)			Credit	Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical		Theory(T)		Practical(P)		Total Marks
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
03	-	0.5	6.5	80(55+25)	20(15+5)	80	20	200

PHYSIOTHERAPY IN CARDIO-PULMONARY CONDITIONS

COURSE OUTCOMES:

At the end of the course candidate will be able to

1. Identify, discuss and analyze cardiovascular and pulmonary dysfunction based on pathophysiological principles and arrive at the appropriate physical and functional diagnosis.
2. Select strategies for cure, care and prevention to adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, work place and in community.
3. Execute the effective physiotherapeutic measures (with appropriate clinical reasoning) with special emphasis to breathing retraining, nebulization, humidification, bronchial hygiene, general mobilization and exercise conditioning in general medical and surgical conditions.
4. Acquire knowledge of the overview of patients care at the intensive care area, artificial ventilation, suctioning, positioning for bronchial hygiene and continuous monitoring of the patient at the intensive care area.
5. Acquire the skill of evaluation and interpretation of functional capacity using simple exercise tolerance tests, symptom limited tests.
6. Acquire the skill of basic cardiopulmonary resuscitation.

Subject Contents:

Sr. No.	Topic	Hours
1	Anatomy and physiology of respiratory & cardiac system a) Anatomy of thorax b) Biomechanics of thoracic cage c) Muscles of respiration d) Ventilation perfusion matching /mismatching, compliance	02
2	Investigations and tests a) Sub maximal /maximal exercise tolerance testing b) Cardiac & Pulmonary radiographs c) PFT d) ABG e) ECG f) Hematological and biochemical Tests	05
3	Physiotherapy techniques to increase lung volume a) Positioning, breathing exercises b) Neurophysiological facilitation of respiration, mechanical aids -Incentive spirometry c) CPAP d) IPPB	10

4	Physiotherapy techniques to decrease the work of breathing a) Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques b) Mechanical aids: IPPB, CPAP, BIPAP	10
5	Physiotherapy techniques to clear secretions a) Hydration b) Humidification & Nebulization c) Mobilization and breathing exercises d) Postural drainage e) Manual techniques: Percussion, vibration and shaking, ACBT, Autogenic Drainage, Mechanical aids: PEP, Flutter, IPPB, facilitation of cough and huff, suctioning	10
6	Physiotherapy in common complications following surgery And Drug therapy a) Drugs to prevent and treat inflammation, drugs to treat bronchospasm b) Drugs to treat breathlessness c) Drugs to help sputum clearance, drugs to inhibit coughing d) Drugs to improve ventilation e) Drugs to reduce pulmonary hypertension drug delivery doses f) Inhalers and nebulizers	05
7	Introduction to ICU & mechanical ventilator a) ICU monitoring – apparatus, airways and tubes used in the ICU - Physiotherapy in the ICU – common conditions in the ICU. b) Mechanical ventilator: types c) Modes of ventilator d) Advantages and disadvantages Oxygen therapy, e) CPR f) Aseptic precautions	13
8	Physiotherapy assessment & management techniques in Obstructive lung conditions a) Chronic bronchitis b) Emphysema c) Asthma d) Bronchiectasis e) Cystic fibrosis	07
9	Physiotherapy assessment & management techniques in Restrictive lung conditions a) Rib fracture b) Pleural effusion c) Pleurisy and empyema d) Pulmonary embolism e) Pulmonary tuberculosis f) Atelectasis, pneumothorax g) Bronchopulmonary fistula h) Pneumonia, ARDS	07
10	Physiotherapy following Lung surgeries a) Pre and post operative physiotherapy b) Assessment and management in Lobectomy c) Pneumonectomy d) Decortication e) Thoracoplasty	05
11	Pulmonary Rehabilitation a) Definition b) Aims and objectives c) Team members	07

	d) Benefits e) Principles of exercise prescription and techniques of rehabilitation	
12	Anatomy and physiology of cardiovascular system a) Anatomy b) Blood supply and conduction system of heart	01
13	Physiotherapy assessment & management for cardiovascular disorders a) Cardiovascular disease b) Congestive heart failure c) Myocardial infarction d) Valvular diseases of heart e) Cyanotic and acyanotic congenital heart diseases f) Endocarditis	05
14	Cardiac Rehabilitation a) Definition b) Aims and objectives c) Team members d) Benefits e) Principles of Exercise prescription and techniques of rehabilitation	07
15	Physiotherapy assessment & management of vascular diseases a) Venous: Thrombosis b) Phlebitis and phlebo-thrombosis c) Varicose veins d) DVT e) Venous Ulcers Arterial: Berger's disease, acute and chronic arterial occlusion, lymphedema	05

List of References:

Text Books:

1. Vascular Rehabilitation, Solomen, Subin – 1st Edition.
2. Textbook of Physiotherapy for Cardio-respiratory Cardiac Surgery and Thoracic Surgery Conditions, Madhuri, GB-1st Edition.

Reference Books:

1. Chest X-Ray Diagnosis, Bhat, Raghavendra – 2nd Edition.
2. Chest X-Ray Made Easy, Corne, Janathan- 5th Edition.
3. Cardiovascular and Pulmonary: Physical Therapy (Evidence to Practice), Frownfelter, Donna- 6th Edition.

List of Open Source Software/learning website:

- k-hub.in e library/A single platform for all e resources (K-hub, E Resource)
 - User Name- KB4605VNG
 - Password- BL@69BX!
- knowledgegainer.delnet.in (Delnet, E Resource)
 - User Name- gjsaum
 - Password- spu10924

PHYSIOTHERAPY IN GENERAL MEDICAL-SURGICAL CONDITIONS

COURSE OUTCOMES:

At the end of the course candidate will be able to

1. Acquire knowledge of rationale of basic investigative approaches in the medical system and surgical intervention regimes related to cardio vascular and pulmonary impairment.
2. Select strategies for cure, care and prevention to adopt restorative and rehabilitative measures for maximum possible functional independence of a patient at home, workplace and in community.
3. Acquire the knowledge of evaluation and physiotherapy treatment for obstetrics and gynecological surgical conditions.
4. Acquire the knowledge of various conditions where physiotherapy plays a vital role in the rehabilitation (psychiatry, dermatology and ENT conditions).
5. Assess the various degrees of burns, plan and implement physiotherapy techniques for the rehabilitation of a burn and wound patient.

Subject Contents:

Sr. No.	Topic	Total Hours
1	Physiotherapy assessment & management for abdominal surgeries surgeries on upper gastro- intestinal tract - oesophagus- stomach duodenum, surgery on large and small intestine – apendicectomy, cholecystectomy, partial colectomy, illeostomy, nephrectomy . Hernia: herniotomy, herniorraphy, hernioplasty	05
2	Physiotherapy Assessment & management in onco surgeries Mastectomy: simple, radical .Hysterectomy, prostatectomy, neck dissection	05
3	Physiotherapy in obstetrics and gynecology surgeries Electrotherapy and exercise therapy measures following pelvic repair and caesarean section	05
4	Wounds, local infections, ulcers, pressure sores UVR and other electrotherapeutic modalities for healing of wound, prevention of hypergranulated scars, relief of pain and mobilization	05
5	Physiotherapy in burns, skin grafts and re-constructive plastic surgery	05
6	Physiotherapy in ENT conditions Nonsuppurative otitis media, chronic suppurative otitis media, otosclerosis, labyrinthitis and mastoidectomy resulting into facial palsy, laryngectomy, pharyngeal – laryngectomy, tracheostomy and its care, sinusitis	02
7	Physiotherapy in skin conditions Leprosy, acne, alopecia, psoriasis, syphilis	02
8	Physiotherapy in psychiatric conditions Schizophrenia, depression, psychosis, anxiety	01
9	Emergency Care Basic Life Support, First aid & emergency care, Biomedical waste management	04

List of References:

Text Books:

1. Principles of Physiotherapy in General Medical and Surgical Conditions, Ramalingam A.Thangamani- 1st Edition.

Reference Books:

1. Vascular Rehabilitation, Solomen,Subin – 1st Edition.

List of Open Source Software/learning website:

- [k-hub.in e library/A single platform for all e resources](#) (K-hub, E Resource)

- User Name- KB4605VNG
- Password- BL@69BX!
- knowledgegainer.delnet.in (Delnet, E Resource)
 - User Name-gjspum
 - Password- spu10924

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Identify, analyze, and discuss cardiovascular and pulmonary dysfunction by applying pathophysiological principles, and utilize appropriate physical and functional diagnostic techniques to assess and evaluate these conditions.	1 Remembering 2 Understanding 3 Analyze 4 Applying 5 Evaluate
CLO2	Acquire knowledge of the basic & Practical concepts of intensive care unit (ICU) management and continuous monitoring of the patient at the intensive care area and able to understand cardiopulmonary resuscitation.	1 Remembering 2 Understanding 3 Analyze 4 Applying
CLO3	Acquire knowledge of artificial ventilation, suctioning, positioning for bronchial hygiene technique.	1 Remembering 2 Understanding 3 Analyze 4 Applying
CLO4	Acquire the knowledge of various conditions where physiotherapy plays a vital role in the rehabilitation (psychiatry, dermatology and ENT conditions)	1 Remembering 2 Understanding 3 Analyze 4 Applying
CLO5	Acquire the knowledge of evaluation and physiotherapy treatment for obstetrics and gynecological surgical conditions.	1 Remembering 2 Understanding 3 Analyze 4 Applying
CLO6	Assess the various degrees of burns, plan and implement physiotherapy techniques for the rehabilitation of a burn and wound patient.	1 Remembering 2 Understanding 3 Applying 5 Evaluate

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)								Program Specific Outcomes (PSOs)							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CLO1	H			M					H			H				M
CLO2		M				M		M			L			M		
CLO3			M							M						
CLO4				M									M	L	M	
CLO5	H				M		L		M			M				M
CLO6						M		L			M					M

H= High M=Medium L=Low