



Department of Respiratory Care

Course Specification of Respiratory Care Science IV Course No. (08 05 875)

2023/2024

LXVIII. Course Description:

This comprehensive course explores the multifaceted role of respiratory therapists in diverse healthcare settings and advanced patient populations. It builds upon foundational knowledge to equip students with the skills to provide comprehensive respiratory care in complex situations, including home care, disaster management, and postoperative settings. Students will delve into the principles of disease management, patient education strategies, and the unique challenges faced by patients with specific respiratory conditions like asthma, COPD, interstitial lung disease, and more. The course also addresses the perioperative management of lung transplant recipients, trauma care, and sepsis management. Through lectures, case studies, and practical exercises, students will gain a deeper understanding of the advanced skills and responsibilities required to excel as respiratory care practitioners in a variety of clinical settings.

IV Course Content:

A – Theoretical Aspect: (if any)

S	Units/ Topics List	No. of Weeks	Contact hours	
1	Home Respiratory Care - Home Care Services - Goals of Home Care - The Medicare Program - The Respiratory Therapist as Home Care Provider - The Initial Home Visit - Bag Technique - Home Environment Evaluation - Long-Term Oxygen Therapy - Newer Home Therapies - Home Ventilation - Evolution of Positive Pressure Home Mechanical Ventilators	1-2	4	
2	Disaster Management - History - The Threat - Planning for Mass-Casualty Respiratory Failure - Ventilator Performance Characteristics - Ventilators for Mass-Casualty Respiratory Failure - Triage	3	2	
3	Principles of Disease Management - Trends and Directions in Healthcare Delivery - Terms and Concepts Associated with Disease Management - Forces Driving Disease Management - History and Evolution of Disease Management - Goals of Disease Management - Basic Principles of Disease Management - Diseases Targeted by Disease Management Programs - Development and Implementation of a Disease Management Program - The Future of Disease Management - Respiratory Therapists as Disease Managers	4-5	4	

4	Patient Education	○ The Rationale for Patient Education ○ Terms Associated with Patient Education ○ The Critical Role of Communication in Patient Education ○ Teaching and Learning Aspects of Patient Education ○ Goals in Patient Education ○ Process of Patient Education ○ Examples of Patient Education Programs	6	2	
5	Postoperative Respiratory Care	○ Preoperative Testing ○ Intraoperative Risk Factors ○ Postoperative Respiratory Failure: Assessment and Management ○ Atelectasis ○ Pulmonary Emboli and Pulmonary Thromboembolic Disease ○ Pneumonia ○ Mechanical Ventilation for Respiratory Failure	7	2	
6	Med-term exam		8	2	-
	Trauma	○ The Primary and Secondary Surveys ○ Thoracic Trauma ○ Airway and Breathing Injuries ○ Circulation Injuries	9-10	4	
		○ Injuries Encountered During the Secondary Survey ○ Head Trauma ○ Primary Survey Issues of Head Injury ○ Secondary Survey Issues of Head Injury ○ Treatment of Head Injuries ○ Ventilator Strategies in Trauma Patients ○ Airway management in Traumatic patients			
7	Sepsis in Respiratory Care	○ Pathogenesis ○ Recognition ○ Treatment ○ Implications for Respiratory Care	11	2	
9	Perioperative Management of Lung Transplant Recipients	○ Lung Transplant History ○ Disease States for Transplantation ○ Transplant Recipient Criteria ○ Lung Allocation Score ○ Donor Evaluation and Selection ○ Donor Management ○ Surgical Procedure ○ Postoperative Management	12	2	
10	Respiratory Care in	○ Asthma ○ Chronic Obstructive Pulmonary Disease ○ Interstitial Lung Disease ○ Pulmonary Vascular Disease ○ Pneumonia ○ Cystic Fibrosis ○ Acute Respiratory Distress Syndrome ○ Heart Failure	13-15	6	
16	Final Exam		16	2	-
TOTAL			16	32	-
Number of Weeks /and Units Per Semester			16 weeks	2 Credits	-

B - Practical Aspect: (if any)				
S	Tasks/ Experiments	Number of weeks	contact hours	
1	<u>Home Respiratory Care Lab:</u> - Setting up and troubleshooting home oxygen therapy equipment (concentrators, liquid oxygen systems). - Demonstration of bag-valve-mask ventilation and tracheostomy care for home care patients. - Assessment of home environments for safety and suitability for respiratory care.	1	2	
2	<u>Noninvasive Ventilation (NIV) in the Home Lab:</u> - Hands-on practice with setting up and adjusting NIV devices (CPAP, BiPAP) for home use. - Patient education on proper mask fitting and usage. - Troubleshooting common NIV issues in the home setting.	1	2	
3	<u>Disaster Preparedness and Triage Simulation:</u> - Simulation of a mass casualty incident with respiratory failure. - Triage of patients using standardized protocols. - Implementation of ventilator allocation and rationing strategies.	1	2	
4	<u>Ventilator Performance Characteristics Lab:</u> - Comparison of different ventilator models and their performance characteristics. - Hands-on assessment of ventilator waveforms and alarms. - Practice adjusting ventilator settings for various clinical scenarios.	1	2	
5	<u>Disease Management Program Development Workshop:</u> - Group activity to design a disease management program for a specific respiratory condition (e.g., asthma, COPD). - Development of educational materials, assessment tools, and monitoring strategies. - Presentation and peer review of disease management program plans.	1	2	
6	<u>Patient Education Simulation Lab:</u> - Role-playing exercises to practice effective communication and patient education techniques. - Development and delivery of patient education materials on respiratory care topics. - Assessment of patient understanding and adherence.	1	2	
7	<u>Postoperative Respiratory Care Simulation:</u> - Simulation of postoperative respiratory complications (atelectasis, pneumonia, PE). - Assessment and management of respiratory failure in the postoperative setting. - Practice with mechanical ventilation for postoperative patients.	1	2	
8	<u>Trauma Assessment and Management Lab:</u> - Simulation of thoracic trauma scenarios (rib fractures, pneumothorax). - Airway management techniques for trauma patients. - Practice with chest tube insertion and management.	1	2	
9	<u>Sepsis Management Simulation:</u> - Identification of sepsis early warning signs and symptoms. - Simulation of sepsis resuscitation protocols. - Respiratory care interventions for sepsis-induced respiratory failure.	1	2	

10	Lung Transplantation Perioperative Care Simulation: • Preoperative assessment and optimization of lung transplant candidates. • Simulation of postoperative respiratory care management in the ICU.	1	2	
	• Long-term monitoring and management of lung transplant recipients.			
11	Asthma and COPD Management Lab: • Hands-on practice with inhaler and nebulizer techniques. • Demonstration of pulmonary function tests for asthma and COPD assessment. • Case studies on exacerbation management and long-term care.	1	2	
12	Interstitial Lung Disease and Pulmonary Vascular Disease Lab: □ Interpretation of high-resolution CT scans and pulmonary function tests for ILD and PVD. □ Discussion of advanced treatment options (e.g., pulmonary vasodilators, oxygen therapy).	1	2	
13	Pneumonia and Cystic Fibrosis Management Lab: • Identification of common pathogens and antibiotic therapy selection. • Airway clearance techniques for cystic fibrosis patients. • Case studies on complications and management strategies.	1	2	
14	Heart Failure and Respiratory Care Lab: • Assessment of respiratory function in patients with heart failure. • Management of pulmonary edema and respiratory distress in heart failure patients. • Discussion of the role of noninvasive ventilation and other respiratory therapies in heart failure.	1	2	
15	Final lab- Exam	1	2	-
TOTAL		15	30	-
Number of Weeks /and Units Per Semester		15 weeks	1 Credits	-

VI. Teaching strategies of the course:

98. Lecture method
99. Practical Evaluation
100. Physical Assessment
101. Clinical exam
102. Brainstorming
103. Demonstration
104. Case study discussions

Schedule of Assessment Tasks for Students during the Semester

Theoretical part

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	
1	Attendance and Activities	15 th week	5	5%	
2	Student assignment	5 th and 12 th week	5	5%	
3	Mid-term exam	7 th or 8 th week	10	10%	
4	Final exam	16 th -17 th week	40	40 %	
Total Theory Weight			60	60%	

Practical part

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	
1	Attendance and Attitude	14 th week	5	5%	
2	Semester work	1 st and 14 th week	10	10%	
3	Case report	13 th -14 th week	5	5%	
4	Final exam (Practical)	15 th week	20	20%	
Total Practical Weight			40	40%	