

Department of Respiratory Care

Course Specification of Respiratory Care Equipment

Course No. (08 05 869)

2023/2024

XXIV. Course Description:

This course provides a comprehensive overview of the essential equipment used in respiratory care. Students will learn the principles behind the manufacturing, storage, and transport of medical gases. They will gain hands-on experience with administering medical gases, airway management devices, humidity and aerosol therapy equipment, and lung expansion therapy devices. Additionally, the course covers the assessment of pulmonary and cardiovascular function, blood gas monitoring, and the use of mechanical ventilation equipment.

V. Course Content:

Distribution of Semester Weekly Plan of Course Topics/Items and Activities.

A – Theoretical Aspect:

Order	Topics List	WeekDue	Contact Hours
1	Manufacture, Storage, and Transport of Medical Gases	1	2
2	Administering Medical Gases	2	2
3	Airway Management Devices and Advanced Cardiac Life Support	3-5	6
4	Humidity and Aerosol Therapy equipment	6-7	4
5	Mid- Exam	8	2
6	Lung Expansion Therapy and Airway Clearance Devices	9-10	2
7	Assessment of Pulmonary & Cardiovascular Function	11-12	2
8	Blood Gas Monitoring	13-14	2
9	Mechanical Ventilation	15	2
10	Final Exam	16	2
Number of Weeks /and Units Per Semester		16	32

B - Practical Aspect: (if any)			
S	Tasks/ Experiments	Number of Weeks	contacthours
1	Lab 1: Medical Gas Systems - Tour a medical gas storage facility (if possible) or examine medical gas manifolds. - Practice calculating gas cylinder durations.	1	2
2	Lab 2: Regulators and Flowmeters Practice setting up and adjusting regulators and flowmeters on medical gas cylinders.	2	2
3	Lab 3: Oxygen Administration Devices Practice using nasal cannulas, simple masks, Venturi masks, and non-rebreather masks.	3	2
4	Lab 4: Mask Ventilation and Resuscitators Practice bag-valve-mask ventilation on manikins.	4	2
5	Lab 5: Basic Airway Adjuncts Practice oropharyngeal and nasopharyngeal airway insertion.	5	2
6	Lab 6: Advanced Airway Devices - Practice supraglottic airway and endotracheal intubation (manikins). - Examine a variety of airway devices.	6	2
7	Lab 7: Airway Management Complications and Troubleshooting Simulate airway management challenges and practice troubleshooting techniques.	7	2
8	Lab 8: BLS/ACLS Practice Practice CPR, AED use, and review ACLS algorithms with an emphasis on devices.	8	2
9	Lab 9: Humidification and Nebulization Set up and use various humidifiers and nebulizer devices.	9	2
10	Lab 10: Lung Expansion and ACT Practice incentive spirometry, IPPB devices, and chest physiotherapy techniques.	10	2
11	Lab 11: Pulmonary Function Testing and Capnography - Perform basic spirometry (if equipment allows). - Practice using capnography devices.	11	2
12	Lab 12: ECG, Hemodynamic Monitoring, and Blood Gas Analysis - Practice ECG lead placement and interpretation (simulated). - Examine hemodynamic monitoring setups. - Practice blood gas sampling and analysis (simulated).	12	2
13	Lab 13: Mechanical Ventilator Overview Examine various mechanical ventilators, focusing on controls and settings.	13	2
14	Lab 14: Ventilator Practice and Troubleshooting - Practice setting up a mechanical ventilator (simulator or basic unit). - Practice responding to ventilator alarms.	14	2
15	Final lab- Exam	15	2
TOTAL		15	30

VI. Teaching strategies of the course:

33.Lecture method 34.Practical
Evaluation 35.Physical Assessment
36.Clinical exam 37.Brainstorming
38.Demonstration
39.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	7th or 8th week	10	10%	
4	Final exam	16 th -17 th week	40	40 %	
Total Theory Weight			60	60%	