Department of Respiratory Care

Course Specification of
Respiratory Care Science I
Course No. (08 05 562)
2023/2024

LVI. Course Description:
This course introduces the fundamentals of respiratory care science. Students will explore the role of the respiratory therapist, principles of gas laws, medical gas storage and therapy, and blood chemistries relevant to respiratory assessment. The course covers humidity, aerosolized therapy, oxygen devices, patient assessment and monitoring, safety protocols, sterilization, and the physiology of breathing.

V. Course Content:

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

A – Theoretical Aspect:

Order	Topics List	WeekDue	Contact Hours
1	Introduction and outlines the course and role of respiratory therapist	1	2
2	Principle of Gases	2	2
3	Storage of Medical Gas and Therapy-part I	3	2
4	Storage of Medical Gas and Therapy-part II	4	2
5	Blood Chemistries and Haematology	5	2
6	Humidity	6	2
7	Aerosolize Therapy	7	2
8	Med-term exam	8	2
9	Oxygen Therapy and Devices	9	2
10	Interpretation of Clinical lab Data	10	2
11	Bedside Assessment of the Patient, Patient Monitoring	11	2
12	Students & patient Safety	12	2
13	Sterilization	13	2
14	Physiology of Breathing- part I	14	2
15	Physiology of Breathing- part II	15	2
16	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	Introduction to Respiratory Care Equipment • Identify common respiratory care equipment related to principlesof gases, medical gas storage, oxygen devices. • Practice safe equipment setup.	1	2
2	Medical Gas Safety and Handling • Demonstrate safe handling of medical gas cylinders. • Practice calculating flow rates and durations.	2	2
3	Humidity and Aerosol Therapy • Set up and calibrate humidifiers and nebulizers.	3	2
4	Oxygen Delivery Systems • Practice selecting and applying appropriate oxygen devices (nasal cannula, masks, etc.). • Titrate oxygen flow rates.	4	2
5	Blood Gas Analysis (if lab resources allow) • Perform basic blood gas sampling (capillary or arterial simulation). • Interpret blood gas results within the context of medical gasesand respiratory function.	5	2
6	Bedside Assessment Part 1 • Practice vital sign measurement (blood pressure, pulse, respiratoryrate). • Perform basic chest auscultation, connecting it to respiratory physiology.	6	2
7	Bedside Assessment Part 2 • Practice patient positioning and mobilization techniques related to respiratory care.	7	2
8	Interpretation of Clinical Lab Data • Analyze various lab results relevant to respiratory care (beyondblood gases).	8	2
9	Infection Control: Hand Hygiene and PPE • Demonstrate proper handwashing techniques. • Practice donning and doffing PPE (gloves, masks, gowns).	9	2
10	Sterilization Techniques • Practice cleaning and disinfecting respiratory equipment.	10	2
11	Respiratory Physiology Simulation (if resources allow) • Use simulation software or models to visualize how gas exchangeand breathing mechanics are altered in different conditions.	11	2
12	Patient Safety in Respiratory Care • Practice safety checks for respiratory equipment • Discuss error prevention strategies	12	2
13	Practice Patient Communication and Education • Role-play scenarios focused on explaining respiratory proceduresand conditions to patients.	13	2
14	Mock Patient Care Scenarios • Combine skills from previous labs in brief patient care simulations.	14	2
15	Final lab- Exam	15	2
TOTAL		15	30
Number of Weeks /and Units Per Semester		15 weeks	1 Credits

VI. Teaching strategies of the course:

77. Lecture method **78.**Practical Evaluation **79.**Physical Assessment**80.**Clinical exam
81. Brainstorming
82. Demonstration
83. Case study discussions

I. Schedule of Assessment Tasks for Students during the Semester

Theoretical part

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

Practical part

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