Respiratory Care Fundamentals I   (RSPT 1329)

Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)

Prerequisite: RSPT 1201

Co-requisite: RSPT 1213, RSPT 1207, RSPT 2210, RSPT 1325

Course Description

Introduction to respiratory care fundamentals.

Required Textbook and Materials

1. Respiratory Care Principles and Practice 3rd Edition (ISBN # 978-1-284-05000-4)
2. Navigate 2 access for Respriatory Care Principles and Practice 3rd Edition)
3. Mosby's Respiratory Care Equipment 9th Edition (ISBN # 978-0-323-09621-7)
4. Dataarc© access
5. A package of #882 Scantrons and #2 pencils
6. Stephoscope
7. Watch (with a second hand and waterproof)

Course Objectives

Upon Completion of this course the student will be able to: Select, review, obtain, and interpret data in a selected respiratory care patient setting; select assemble, and check equipment for proper function, operation, and cleanliness: identify equipment malfunctions; maintain patient records; and demonstrate knowledge of therapeutic procedures.

1. Select, assemble, and check the function of equipment used in: gas analysis, oxygen therapy delivery systems, and aerosol delivery devices.

2. Select/ Revise the appropriate Respiratory Therapy procedures to produce a desired patient outcome.

3. Troubleshoot problems with the interaction of the patient with various Respiratory Care equipment.

4. Perform/analyze/ interpret vital signs, physical assessment, patient interview

5. Describe/identify various diseases requiring specific isolation procedures

6. Perform and demonstrate competency in the laboratory setting for the following procedures: patient assessment, oxygen transport, oxygen delivery devices (nasal cannula, simple mask, partial rebreather, non-rebreather, air-entrainment masks), gas analysis (FiO2), aerosol delivery devices (face mask, face tent, t-piece), chest x-ray interpretation, aerosol medication delivery (SVN, MDI, DPI)

Course Outline

Revised 08/18

I. Bedside Assessment of Respiratory Disorders
    A. Interview
        1. Purpose
        2. Principles of interview
            a. Verbal and non verbal communication
            b. Cross cultural communication
        3. Structure and Technique
        4. Common Signs and symptoms
        5. Performing interview
            a. Medical History
            b. Social History
            c. Job History
            d. Assessing with Borg Scale
        6. Review patient data in medical records

    B. Physical exam
        1. Format for recording
            a. Computer sign on – legal issues
        2. Procedure
            a. Heart rate- (rate, rhythm)
            b. Blood Pressure
            c. Respiratory Rate
            d. Heart Sounds
        3. Analysis/interpretation of findings
        4. Performing exam
        5. Maintain records and Communicate
            a. SOAP notes
            b. SBAR communication
            c. Document in medical records

II. Clinical Data
    A. Complete Blood Count
        1. Normal values
        2. Interpretation of abnormal Values
    B. Blood chemistry
    C. Glucose
    D. Microbiology
        1. Lab tests
        2. Diseases requiring specific Isolation

III. Thoracic Imaging
    A. Approach to reading
    B. Techniques and Quality
        1. A-P
        2. P-A
        3. Lateral
        4. CT
        5. HRCT
        6. Ultrasound
        7. MRI

        C.   Anatomical structures
- 1. Normal
- 2. Abnormal

        D.   The Pleura

        E.   Lung Parenchyma

        F.   Mediastinum

        G.   Tube markings
- 1. Et tube
- 2. Balloon tip flow directed
- 3. Naso-gastric tube
- 4. EKG electrodes

        H.   Abnormalities
- 1. Atelectasis
- 2. Pleural effusion
- 3. Pneumothorax
- 4. Abnormal tube positions
    - a. Balloon tip flow directed catheter
    - b. Endo- tracheal tube
    - c. Naso-gastric tube

IV. Humidity and Aerosol Administration
        A.   Indications
        B.   Delivery Devices
- 1. Setup
    - a. Large volume Nebulizer
    - b. Drug delivery – via Small volume Nebulizer, MDI and DPI with prescribed drugs
    - c. Passover Humidification (wick and HME)
- 2. Administration

        C.   Problem Solving and Troubleshooting
        D.   Selecting Appropriate Therapy

V. Medical Gases
        A.   Storage, Delivery, Identification
        B.   Central Piping systems
        C.   Safety Index system
        D.   Regulators

VI. Medical Gas Therapy
        A.   Goals and Objectives
        B.   Clinical Practice Guidelines
        C.   Assessing the Need
        D.   Precautions and Hazards
        E.   Delivery Systems
- 1. Nasal Cannula
- 2. Simple Mask
- 3. Ventimask
- 4. Non-rebreather
- 5. Partial rebreather

      6.   Nasal catheter
      7.   Aerosol Delivery devices to deliver Oxygen
          a.   Aerosol Face tent
          b.   Aerosol Face mask
          c.   T-Tube (Briggs Adapter)
          d.   Aerosol Trach Collar
   F.   Troubleshooting Delivery systems
   G.   Total Flow
   H.   Analysis of percentage
      1.   Procedure
      2.   Results
      3.   Troubleshooting

VII.   Case Studies
   A.   Scenario
   B.   Analyzing data
   C.   Interpretation of data
   D.   Care of Plan
   E.   SOAP Notes

Grade Scale

93 – 100	A
85 – 92	B
77 – 84	C
68 – 76	D
0 – 67	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. 6-7 exams (4 didactic and 2-3 lab exams)   85%

2. Lab   10%

3. Quiz   5%

Course Requirements

1. Competency in the following procedures:
   patient assessment, oxygen transport, oxygen delivery devices (nasal cannula, simple mask, partial rebreather, non-rebreather, air-entrainment masks), gas analysis (FiO2), aerosol delivery devices (face mask, face tent, t-piece, Trach collar), aerosol medication delivery (SVN, MDI, DPI)

Course Policies

1. No food or drink, or use of tobacco products in class
2. Beepers, telephones, headphones, and other electronic devices must be turned off while in class. No cell phone or electronic devises during testing. For calculator use during exams you are not to use cell phone or other electronic device except a regular calculator.
3. No children allowed in the classroom
4. No late assignments will be accepted
5. Abide by LIT policies
6. Abide by policies within the Respiratory Care Handbook
7. Abide by instructor specific policies; this will be distributed on the first class day.
8. Exam dates will be distributed the first class day. However, exam dates and material may vary to facilitate student learning.
9. Electronic communication will be thru your LIT email.
10. Homework assignments are due at the beginning of class. No late work accepted.

Technical Requirements (for courses using Blackboard)

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:
https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at http://www.lit.edu/depts/stuserv/special/defaults.aspx

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document