RSPT 50A: RESPIRATORY THERAPY PROCEDURES

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2022
Units:	4.5
Hours:	3 lecture, 5 laboratory per week (96 total per quarter)
Advisory:	Demonstrated proficiency in English by placement via multiple measures OR through an equivalent placement process OR completion of ESLL 125 & ESLL 249.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- The student will be able to explain basic respiratory therapy concepts and procedures related to the fundamentals of respiratory therapy.
- The student will perform lab competencies with a lab partner or solo and must complete all lab competencies with a score of 70% or higher.

Description

Basic hospital and respiratory therapy procedures. Vital signs, compressed gas equipment, oxygen therapy, medical asepsis, bedside pulmonary function testing, disaster and emergency procedures, back safety. Intended for students in the Respiratory Therapy program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

1. Monitor vital signs and breath sounds
2. Perform basic pulmonary function tests
3. Handle compressed gas equipment safely
4. Calculate duration of cylinder life
5. Maintain, calibrate, troubleshoot and use oxygen analyzers
6. Evaluate patient, review physicians orders to administer oxygen therapy and aerosol drug therapy, use a therapist driven protocol to assess the patient's need for oxygen therapy and troubleshoot oxygen therapy
7. Demonstrate use of pulse oximeter
8. State indications and hazards of carbon dioxide and helium therapy
9. Demonstrate medical aseptic techniques
10. Demonstrate proper body mechanics when moving patients
11. Describe standard fire and disaster procedures
12. Interpret clinical laboratory data
13. Demonstrate use of humidity and bland aerosol therapy
14. Discuss the use of aerosol drug therapy

Course Content

1. Vital signs and breath sounds
   a. Temperature
   b. Heart rate
   c. Blood pressure
   d. Use of sphygmomanometer
   e. Use of stethoscopes
2. Basic pulmonary functions tests
   a. Forced vital capacity test
   b. Peak flow test
   c. Use of pulmonary function screener
   d. Use peak flowmeters
3. Compressed gas equipment
   a. Compressed gas tanks
   b. Compressed gas piping systems
   c. Liquid oxygen storage systems
   d. Oxygen concentrators
   e. Safe handling of compressed gases
   f. Maintenance of oxygen manifold system
4. Compressed gas regulation equipment
   a. Reducing valves
   b. Bourdon gauges
   c. Thorpe tubes
   d. Regulators
   e. Safety devices
5. Oxygen analyzers
   a. Calibration of analyzers
   b. Maintenance of analyzers
   c. Use of analyzers
6. Oxygen therapy
   a. Indication for therapy
   b. Select proper oxygen device
   c. Deliver oxygen therapy per physician's order and therapy driven protocols
   d. Complication of therapy
   e. Evaluating effectiveness of therapy
   f. Oxygen therapy equipment
   g. Variable performance vs. fixed performance devices
   h. Low flow devices (with and without reservoirs)
   i. High flow devices
   j. Enclosures
   k. Oxygen rounds
   l. Hyperbaric oxygen therapy
7. Pulse oximetry
   a. Use of pulse oximetry
   b. Limitations of pulse oximeters
8. Carbon dioxide and helium therapy
   a. Indications/contraindications
   b. Complications/hazards

   c. Evaluating effectiveness
   d. Equipment used
9. Medical asepsis
   a. Handwashing
   b. Regular isolation
   c. Reverse isolation
   d. Universal precautions
   e. AIDS/hepatitis/TB
   f. Techniques applicable to respiratory therapy
10. Body mechanics
   a. Positioning patients
   b. Moving patients
   c. Emergency carries
   d. Prevention of back injuries
11. Fire and disaster procedures
   a. Responding to fires and disasters
   b. Medical triage
   c. Patient evacuation
   d. Respiratory therapy in emergency situations
12. Blood chemistry and laboratory data
   a. Complete blood count
   b. Blood chemistry tests
   c. Serum glucose
   d. Microbiology tests
13. Humidity and bland aerosol therapy
   a. Heat and moisture exchange
   b. Humidification of inspired gas
   c. Bland aerosol delivery devices
   d. Selection of appropriate device
   e. Troubleshooting humidity and bland aerosol devices
14. Aerosol drug therapy
   a. Selection of best drug delivery device
   b. Hazards of aerosol therapy
   c. Assessing patient's response to therapy
   d. Controlling environmental contamination

Lab Content

1. Vital signs and lung sounds
   a. Students will discuss common body temperature sites and proper technique for taking a patient's temperature
   b. Students will apply the use of a sphygmomanometer for measuring blood pressure
   c. Students will draw conclusions about abnormal disorders of the lungs based on lung sound findings
2. Basic pulmonary functions tests
   a. Students will learn how to perform a forced vital capacity test
   b. Students will use a peak flow meter and draw conclusions about abnormal outcomes represented
   c. Students will pre-assess patient lung function status using a peak flow screening tool
3. Handling of compressed gas equipment
   a. Students will transport and position compressed gas tanks
   b. Students will discuss common components of compressed gas piping systems
   c. Students will differentiate between liquid oxygen storage systems and oxygen concentrators
   d. Students will discuss maintenance of oxygen manifold system
4. Proper use of compressed gas regulation equipment
   a. Students will manipulate reducing valves onto compressed gas tanks
   b. Students will differentiate Bourdon gauge and Thorpe tube flowmeters
   c. Students will identify regulator safety systems
5. Proper use of oxygen analyzers
   a. Students will perform one and two point calibration of analyzers
   b. Students will discuss maintenance techniques of analyzers
   c. Students will use analyzers to verify fraction of inspired oxygen
6. Oxygen therapy
   a. Students will list the indications for oxygen therapy
   b. Students will select proper oxygen devices based on patient criteria
   c. Students will practice the delivery of oxygen therapy per physician's order and therapy driven protocols
   d. Students will identify complications of therapy
   e. Students will evaluate the effectiveness of therapy
   f. Students will review and manipulate oxygen therapy equipment
   g. Students will differentiate variable performance vs. fixed performance devices
   h. Students will differentiate between low flow devices (with and without reservoirs), high flow devices, and enclosures
   i. Students will discuss the guidelines for oxygen rounds
7. Pulse oximetry
   a. Students will demonstrate the use of pulse oximetry
   b. Discuss limitations of pulse oximeters
8. Carbon dioxide and helium therapy
   a. Identify indications/contraindications
   b. Identify and troubleshoot complications/hazards
   c. Students will evaluate the effectiveness of therapy
   d. Students will select appropriate equipment to be used
9. Medical asepsis
   a. Students will perform hand hygiene in compliance with standard protocols
   b. Students will apply safety standards associated with regular isolation, reverse isolation, and universal precautions
   c. Students will discuss other asepsis techniques applicable to respiratory therapy
10. Body mechanics
   a. Students will position and move patients using correct body mechanics
   b. Students will perform emergency carries
11. Fire and disaster procedures
   a. Discuss common protocols for responding to fires and disasters
   b. Discuss code verbiage associated with medical triage
   c. Discuss scenarios associated with patient evacuation
   d. Review types of respiratory therapy in emergency situations
   e. Apply emergency cardiovascular life support based on patient care scenarios
12. Blood chemistry and laboratory data

a. Review complete blood count
b. Review blood chemistry tests
c. Review serum glucose
d. Review microbiology tests

13. Humidity and bland aerosol therapy
    a. Identify heat and moisture exchangers
    b. Discuss types of humidification of inspired gas
    c. Differentiate bland aerosol delivery devices
    d. Select and troubleshoot humidity and bland aerosol devices
14. Aerosol drug therapy
    a. Select the best drug delivery device
    b. Identify hazards of aerosol therapy
    c. Assess patient's response to therapy
    d. Identify ways of controlling environmental contamination

Special Facilities and/or Equipment

1. Stethoscopes, blood pressure cuffs, water, piped in compressed medical oxygen and air, oxygen equipment, compressed gas control equipment, H and E sized oxygen tanks, oxygen therapy equipment, oxygen analyzers, infection control equipment.
2. Student needs internet access.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Quizzes
Midterm
Final exam
Laboratory performance

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion
Laboratory
Demonstration
Lab competencies demonstrated in skills

Representative Text(s) and Other Materials

Kacmarek, Stoller, and Heuer. Egan's Fundamentals of Respiratory Care, 12th ed.. 2019.

Wehrman. Workbook for Egan's Fundamentals of Respiratory Care, 12th ed.. 2019.

Hinski, Sandra T.. Respiratory Care Clinical Competency Lab Manual. 2014.

Despite being older than five years, the Hinski text demonstrates tasks and cognitive levels included on the entry-level examination for licensing, as well as on the written RRT examination and Clinical Simulation examination. Currently no content updates.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Reading assignments from the textbook, approximately 1-2 chapters per week
2. Workbook assignments weekly
3. Competencies related to course content weekly

Discipline(s)

Respiratory Technologies