



El Camino College
COURSE OUTLINE OF RECORD – Approved

I. GENERAL COURSE INFORMATION

Subject and Number: Respiratory Care 174
Descriptive Title: Introduction to Respiratory Care Equipment and Patient Care Procedures
Course Disciplines: Respiratory Technologies
Division: Health Sciences and Athletics

Catalog Description:

This course will review operational concepts and procedures for respiratory care equipment. The student will get hands-on experience selecting, assembling and checking respiratory care equipment for proper function, operation and cleanliness. The course will also provide experience performing and understanding the purpose of basic care procedures such as charting, vital signs, bed operation, and other respiratory care related basic patient care procedures.

Conditions of Enrollment:

Recommended Preparation: Respiratory Care 170

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|--------------------------|----------------------------|---|
| Course Length: | X Full Term | Other (Specify number of weeks): |
| Hours Lecture: | 1.00 hours per week | TBA |
| Hours Laboratory: | 6.00 hours per week | TBA |
| Course Units: | 3.00 | |

Grading Method: Letter
Credit Status: Associate Degree Credit

Transfer CSU: Yes **Effective Date:** 07/01/1990
Transfer UC: No

General Education:

El Camino College:

CSU GE:

IGETC:

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

SLO #1 Appropriate and Competent FIO2 Management

Given an in-class patient care scenario during an oral examination based on assigned reading, demonstrate appropriate and competent FIO2 management using guidelines set in clinical competencies section of the Data Arc system for clinical practice.

SLO #2 Explain RC Equipment Function

During classes & labs, students will demonstrate and explain appropriate respiratory care competencies such as FIO2 monitoring and managing patients receiving prolonged artificial ventilation, pulmonary rehabilitation, life support procedures, bronchial hygiene and oxygen therapy.

SLO #3 Comprehensive Final Exam on RC Equipment Operation

Students who stay in the course till the end of semester will take a comprehensive final multiple choice examination and 80% will obtain a grade of 70% or better.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below)

1. Select the appropriate equipment as determined by the respiratory care plan.
2. Assemble respiratory care equipment for use in patient care.
3. Check respiratory care equipment for proper function and correct malfunctions within specified amount of time.
4. Identify inappropriate equipment selection where presented with patient care plan and patient data.
5. Recommend modifications in respiratory care equipment based on respiratory care plan and patient data.
6. Take vital signs and other respiratory care measurements accurately and report results verbally and in writing as appropriate.
7. Identify appropriate statements or actions as they relate to basic patient care procedures used in respiratory care.

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic |
|----------------|-------------------|--------------|--|
| Lecture | 1 | I | Basic patient care procedures such as: A. Vital signs B. Basic auscultation of the chest |
| Lab | 6 | II | Basic patient care procedures such as: A. Vital signs B. Basic auscultation of the chest |
| Lecture | 1 | III | Overview of basic principles of infection and quality control when using respiratory care equipment such as: A. Infection control when using heated humidifiers and nebulizers. B. Quality control when using an oxygen analyzer |

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|---------|----|------|--|
| Lab | 6 | IV | Overview of basic principles of infection and quality control when using respiratory care equipment such as: A. Infection control when using heated humidifiers and nebulizers. B. Quality control when using an oxygen analyzer |
| Lecture | 2 | V | Humidifiers and aerosol generators such as: A. Bubble humidifiers B. Jet nebulizers. |
| Lab | 12 | VI | Humidifiers and aerosol generators such as: A. Bubble humidifiers B. Jet nebulizers. |
| Lecture | 2 | VII | Oxygen administration devices such as: A. Nasal cannulas B. Non-rebreathing masks. |
| Lab | 12 | VIII | Oxygen administration devices such as: A. Nasal cannulas B. Non-rebreathing masks. |
| Lecture | 2 | IX | Resuscitation devices such as: A. Artificial airways B. Suctioning devices C. Vacuum systems |
| Lab | 12 | X | Resuscitation devices such as: A. Artificial airways B. Suctioning devices C. Vacuum systems |
| Lecture | 2 | XI | Ventilators and adjunct equipment such as: A. Patient breathing circuits B. Respirometers |
| Lab | 12 | XII | Ventilators and adjunct equipment such as: A. Patient breathing circuits B. Respirometers |
| Lecture | 2 | XIII | Gas delivery, metering and clinical analyzing devices such as: A. Manometers and gauges B. Pulse Oximeters C. Capnographs |
| Lab | 12 | XIV | Gas delivery, metering and clinical analyzing devices such as: A. Manometers and gauges B. Pulse Oximeters C. Capnographs |
| Lecture | 1 | XV | Aerosol tents and adjunct equipment such as: A. Percussors and vibrators B. Mist tents |
| Lab | 6 | XVI | Aerosol tents and adjunct equipment such as: A. Percussors and vibrators B. Mist tents |
| Lecture | 1 | XVII | Electrocardiography devices and bronchoscopes such as: |

| | | | |
|------------------------|----|-------|--|
| | | | A. Laryngoscopes B. Heart Monitors |
| Lab | 6 | XVIII | Electrocardiography devices and bronchoscopes such as: A. Laryngoscopes B. Heart Monitors |
| Lecture | 1 | XIX | Sustained Maximal Inhalation devices such as: A. Incentive Spirometers B. Expiratory Flow Resistors |
| Lab | 6 | XX | Sustained Maximal Inhalation devices such as: A. Incentive Spirometers B. Expiratory Flow Resistors |
| Lecture | 1 | XXI | Metered dose inhalers and small particle aerosol generators such as: A. Dry Powder Inhalers B. SPAG-1 |
| Lab | 6 | XXII | Metered dose inhalers and small particle aerosol generators such as: A. Dry Powder Inhalers B. SPAG-1 |
| Lecture | 2 | XXIII | Trouble shooting and correcting malfunctioning respiratory care equipment such as: A. Non-misting aerosol generators B. Incorrectly reading oxygen monitors. |
| Lab | 12 | XXIV | Trouble shooting and correcting malfunctioning respiratory care equipment such as: A. Non-misting aerosol generators B. Incorrectly reading oxygen monitors. |
| Total Lecture Hours | | 18 | |
| Total Laboratory Hours | | 108 | |
| Total Hours | | 126 | |

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Skills demonstrations

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Mrs. Jones is admitted to the emergency department. Introduce yourself to the patient, take vital signs and set up a nasal cannula at 2 liters per minute according to the respiratory care plan.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Troubleshoot a malfunctioning high output humidifier and identify problems as well as appropriate remedies or solutions.
2. Given conflicting data from a ventilator manometer, evaluate and determine which data is accurate under the specified circumstances.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams

Quizzes

Reading reports

Laboratory reports

Class Performance

Homework Problems

Multiple Choice

Matching Items

True/False

Other (specify):

Group active learning assignments simulating clinical situations that require information collection and decision making in order to solve patient problem and determine course of therapy.

Multiple true/false, Patient Management Problems, and branching logic computer-assisted clinical simulations.

V. INSTRUCTIONAL METHODS

Demonstration

Discussion

Group Activities

Guest Speakers

Laboratory

Lecture

Multimedia presentations

Role Play

Simulation

Other (please specify)

Group active learning assignments simulating equipment situations that require information collection and decision making in order to solve malfunction problem and/or determine course of action.

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study

Answer questions

Skill practice

Required reading

Problem solving activities

Observation of or participation in an activity related to course content

Other (specify)

Equipment simulation situation problems students workup and report in writing and orally the information gathering and decision making in troubleshooting the equipment until resolution of the problem or achieve functionality.

Estimated Independent Study Hours per Week: 2

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Robert L. Wilkins. Fundamentals of Respiratory Care. 10th ed. Elsevier, 2013. Discipline Standard

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

D. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

| Requisites | Category and Justification |
|------------|----------------------------|
|------------|----------------------------|

B. Requisite Skills

| Requisite Skills |
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C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation | Category and Justification |
|--|----------------------------|
| Course Recommended Preparation Respiratory Care-170 | |

D. Recommended Skills

| Recommended Skills |
|---|
| Solve mathematical word and number problems that require the application of basic sciences in physics, chemistry, biochemistry, microbiology and physiology to new situations. RC 170 - Solve mathematical word and number problems that require the application of basic sciences in physics, chemistry, biochemistry, microbiology and physiology to new situations. |
| Match respiratory care problems with the appropriate science concept, law, formula or principle needed to understand or solve the problem. RC 170 - Match respiratory care problems with the appropriate science concept, law, formula or principle needed to understand or solve the problem. |

E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|-------------------------------------|-------------------------------|
|-------------------------------------|-------------------------------|

Course created by Stanley M. Baldwin on 07/30/2015.

BOARD APPROVAL DATE: 07/01/1990

LAST BOARD APPROVAL DATE: 05/18/2020

Last Reviewed and/or Revised by: Roy Mekar

Date: 01/08/2020