



I. GENERAL COURSE INFORMATION

Subject and Number: Respiratory Care 176
Descriptive Title: Introduction to the Respiratory Care of the Non-Critically Ill Patient
Course Disciplines: Respiratory Technologies
Division: Health Sciences and Athletics

Catalog Description:

This course deals primarily with the non-critically ill adult patient. It will provide the student with cognitive and psychomotor practice performing basic respiratory care in health service organizations in the South Bay area. Students receive most of their classroom/cognitive instruction at El Camino College and are rotated during the day, evening and/or night shifts to clinical affiliates.

Conditions of Enrollment:

Prerequisite: Respiratory Care 172 and Respiratory Care 174 with a minimum grade of C

Enrollment Limitation

Admission to the Respiratory Care Program requiring a completed application and physical exam forms indicating readiness for clinical practice as a Respiratory Care Practitioner.

Note: It is also required that all non-respiratory care courses for the Respiratory Care Associate in Science degree be completed prior to enrollment in this course.

Recommended Preparation: Computer Information Systems 13 AND Psychology 5

Course Length:	X Full Term	Other (Specify number of weeks):
Hours Lecture:	3.00 hours per week	TBA
Hours Laboratory:	9.00 hours per week	XTBA
Course Units:	6.00	

Grading Method: Letter
Credit Status: Associate Degree Credit

Transfer CSU: Yes **Effective Date: 12/1/1990**
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)

1. 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.
2. 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.
3. Students who stay in the course till the end of the 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. Given existing clinical data, collect or recommend obtaining additional pertinent data relevant to a respiratory care plan.
2. Given existing clinical data, suggest or identify appropriate actions to modify or develop a respiratory care plan.
3. Explain planned therapy goals to the patient; maintain records and communicate relevant information to members of the health care team concerning a respiratory care plan.
4. Conduct ventilation and oxygenation procedures on non-critically ill patients to achieve adequate arterial and tissue oxygenation.
5. Perform respiratory care procedures to maintain a patient's airway, remove bronchopulmonary secretions and provide adequate spontaneous and artificial ventilation.
6. Evaluate and monitor a patient's response to respiratory care and identify or verbalize appropriate action for a Respiratory Care Practitioner.
7. Protect patients from nosocomial infections by adherence to infection control policies and procedures.

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	3	I	Orientation A. Review course content to start researching, expectations of students and resources available to all course participants. B. Review the past content that will apply to new course content and clinical skill requirements. C. Prepare students for the patient care culture and ethical rules of providing respiratory patient care.
Lecture	9	II	Review of oxygen, pulmonary and cardiac physiology with a focus on oxygen transportation and tissue oxygenation. A. Subtopics: 1. Fick equation and its application to clinical respiratory care 2. Minute volume, alveolar air and other useful equations to determine level of oxygen and ventilation
Lecture	6	III	Review of all respiratory care oxygen therapy equipment and its interaction with the patient's physiology. A. Subtopics: 1. The relationship between the physiology and physics in respiratory care. 2. Which gas laws describe normal breathing and its hemodynamic effects. 3. Contrast between normal and positive pressure breathing with respect to ventilation, oxygenation and hemodynamics.
Lecture	6	IV	Oxygen therapy to prevent tissue hypoxia. A Subtopics: 1. The four types of hypoxia 2. Identifying and treating the four types of hypoxia 3. How do we prioritize our treatment of pulmonary, anemic, circulatory, and histotoxic hypoxia
Lecture	15	V	Humidity and aerosol therapy for the purpose of maintaining and/or improving bronchial hygiene. A. Subtopics: 1. Normal humidity and water vapor content in the ambient air, tracheal air and alveolar air 2. The difference between humidity and aerosol therapy 3. Determining the appropriate body humidity and matching equipment 4. Assess the patient's aerosol therapy needs and specify drugs, equipment and procedure
Lecture	15	VI	Sustained maximum inspiration therapy and its relationship to spontaneous breathing and pulmonary dysfunction. A. Subtopics: 1. Deep breathing vs normal spontaneous breathing and the pulmonary function values.

			<p>2. Hemodynamic consequences of various forms of SMI techniques.</p> <p>3. Assessing patient need for various SMI techniques and modifying therapy as appropriate based on patient response.</p>
Lab	162	VII	<p>TO BE ARRANGED HOURS</p> <p>Application of oxygen therapy procedures, bronchial hygiene procedures and deep breathing techniques to non-critical care patients in hospitals, clinics, rehabilitation units and other appropriate disease control and prevention environments. DATAARC Competencies on your disk or online, by course:</p> <p>RC 176 (Adult Floor Therapies)</p> <ol style="list-style-type: none"> 1. Basic life support 2. Hand washing 3. Vital signs 4. Nasal Cannula 5. Simple mask 6. Partial Rebreathing mask 7. Air entrainment mask 8. Pulse oximetry 9. Transport with oxygen 10. Face tent (aerosol) 11. Face mask (aerosol) 12. Trach Collar (aerosol) 13. T-piece (aerosol) 14. MDI- Metered Dose Inhaler 15. DPI-Dry Powder Inhaler 16. SVN- Small Volume Nebulizer 17. I.S.- Incentive Spirometer 18. IPPB- Intermittent Positive Pressure Ventilation 19. CPT- Chest Physical Therapy 20. Coughing 21. Mucous clearing adjuncts 22. Generic <p>There are specific competency procedures, skills and knowledge outlined in competency evaluation forms online thru DataArc, each student & instructor have access, if audited we can provide access to auditors or committee members.</p>
Total Lecture Hours		54	
Total Laboratory Hours		162	
Total Hours		216	

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Problem solving demonstrations (computational or non-computational)

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Given a non-critically ill patient receiving oxygen therapy, and access to appropriate information, determine if any modification in the respiratory care plan is required and be prepared to identify and/or verbalize what you would do or recommend and why.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Three patients are admitted to the emergency department in respiratory distress and the following arterial blood gases are obtained:

Patients 1 2 3
Ph 7.50 7.25 7.3
PaCO₂ 30 75 60
PaO₂ 40 40 40

Due to patients' PaO₂, MD orders all patients to receive 100% oxygen by mask.

In a one page paper identify in which of these three patients this would be therapeutic, contraindicated, or hazardous and describe why.

2. Three patients are in the intensive care unit with the following arterial blood gases:

Patients 1 2 3
Ph 7.50 7.25 7.3
PaCO₂ 30 75 60
PaO₂ 40 40 40
Hb 15 5 25

All three patients PaO₂'s begin to drop.

In a one page paper identify which patient will become cyanotic first and the order in which patients will all begin to suffer tissue hypoxia.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams
Other exams
Quizzes
Reading reports
Written homework
Laboratory reports
Field work
Class Performance
Homework Problems
Term or other papers
Multiple Choice
Completion
Matching Items
True/False
Other (specify):

Equipment situations that simulate problems requiring students to report in writing and orally the information gathering and decision making required to trouble-shoot the equipment until resolution of the problem or achievement of functionality.

Clinical performance in the lab and at the patient's bedside in our clinical affiliate hospitals, clinics, health fairs and elementary schools.

Clinical performance at the patient's bedside in our clinical affiliate hospitals, clinics, health fairs and elementary schools indicating understanding of patient's therapy and capable of recommending changes when indicated.

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

V. INSTRUCTIONAL METHODS

Demonstration

Discussion

Group Activities

Guest Speakers

Internet Presentation/Resources

Laboratory

Lecture

Multimedia presentations

Role Play

Simulation

Other (please specify)

Alternate classroom sites in hospitals, clinic, health fairs, and schools as appropriate.

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

Written work

Journal

Observation of or participation in an activity related to course content

Other (specify)

Case study workup on patients and reporting in writing and orally the information gathering and decision making in managing the patient's care.

Estimated Independent Study Hours per Week: 6

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

Robert L. Wilkins. Egan's Fundamentals of Respiratory Care. 10th ed. Elsevier Health Sciences, 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
Course Prerequisite Respiratory Care-172 AND	Sequential
Course Prerequisite Respiratory Care-174	Sequential

B. Requisite Skills

Requisite Skills
a. Identify the basic function of the cardiopulmonary system as it relates to respiratory care. RC 172 - Identify the basic function of the cardiopulmonary system as it relates to respiratory care.
b. Identify dysfunction in the cardiopulmonary system when providing various respiratory care therapies and drugs. RC 172 - Identify dysfunction in the cardiopulmonary system when providing various respiratory care therapies and drugs.
c. Calculate percentages, ratios and dosages of drugs prescribed for the cardiopulmonary system in respiratory care. RC 172 - Calculate percentages, ratios and dosages of drugs prescribed for the cardiopulmonary system in respiratory care.
d. Assemble respiratory care equipment for use in patient care. RC 174 - Assemble respiratory care equipment for use in patient care.
e. Check respiratory care equipment for proper function and correct malfunctions within specified amount of time. RC 174 - Check respiratory care equipment for proper function and correct malfunctions within specified amount of time.
f. Identify inappropriate equipment selection where presented with patient care plan and patient data. RC 174 - Identify inappropriate equipment selection where presented with patient care plan and patient data.
g. Take vital signs and other respiratory care measurements accurately and report results verbally and in writing as appropriate. RC 174 - Take vital signs and other respiratory care measurements accurately and report results verbally and in writing as appropriate.

h. Identify appropriate statements or actions as they relate to basic patient care procedures used in respiratory care.
 RC 174 - Identify appropriate statements or actions as they relate to basic patient care procedures used in respiratory care.

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification
Course Recommended Preparation AND Computer Information Systems-13	
Course Recommended Preparation Psychology-5	

D. Recommended Skills

Recommended Skills
Identify and analyze existing and emerging technologies and their impact on the business of medical organizations delivering patient care including computer usage, communication, and information systems. CIS 13 - Identify and analyze existing and emerging technologies and their impact on organizations and society including computer, communication and information systems, privacy, security, crime, ethics, global relationships, and career opportunities.
Basic foundations of understanding psychology of behavior as it relates to patients and supporting family. PSYC 5 - Identify and evaluate the major theories of emotion with an emphasis on behavioral, physiological, and cognitive components. PSYC 5 - Discuss the influence of stress, personality, and other psychological phenomena on physical health.

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact
Admission to the Respiratory Care Program requiring a completed application and physical exam forms indicating readiness for clinical practice as a Respiratory Care Practitioner. Note: It is also required that all non-respiratory care courses for the Respiratory Care Associate in Science degree be completed prior to enrollment in this course.	Students begin the clinical phase (A.S. degree requirements) of the Respiratory Care program after being accepted into the program.

Course created by Louis M. Sinopoli on 03/04/2013.

BOARD APPROVAL DATE: 12/01/1990

LAST BOARD APPROVAL DATE: 05/18/2020

**Last Reviewed and/or Revised by: Roy Mekaru
 20221**

Date: 2/2/2020