Course Acronym:	RC
Course Number:	178
Descriptive Title:	Respiratory Care of the Critically Ill Patient I
Division:	Health Sciences and Athletics
Department:	Respiratory Care
Course Disciplines:	Respiratory Technologies
Catalog Description:	This course is an introduction to the practice of respiratory care in intensive care units with an emphasis on patient ventilator interaction. The student will manage critically ill patients on prolonged artificial ventilation using microprocessor-driven ventilators, alarms, arterial blood gases and other appropriate techniques and equipment. Students are rotated through evening, night, and day critical care units in hospitals.
Prerequisite:	Respiratory Care 176 with a minimum grade of C
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	4
Hours Laboratory (per week):	12
Outside Study Hours:	8
Total Course Hours:	288
Course Units:	8
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	Pending
Transfer UC:	Yes
Effective Date:	
General Education: ECC	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	
Other:	

Student Learning Outcomes:	**SLO #1 Appropriate and Competent FI02 Management** Given an in-class patient care scenario during an oral examination based on assigned reading, demonstrate appropriate and competent FI02 management using guidelines set in clinical competencies section of the Data Arc system for clinical practice. **SLO #2 Demo ICU RC Procedures** 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 Procedures for ICU RC Patients** 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.
Course Objectives:	1. Interpret arterial blood gases and classify according to clinical terms used in the management of adult patients on life support. 2. When given patient results at room air levels or higher, calculate FIO2 and/or PaO2 as a result of requested changes. 3. Identify use, settings, problems and indications for all alarms and monitoring devices found on adult artificial ventilators. 4. Identify and/or verbalize basic changes in FIO2, f, Vt, VE, VA, IFR, IE ratio, VD etc., when given access to patient's ABGs, history, physical, and other appropriate information, in order to manage adult patient ventilator interaction. 5. Conduct therapeutic procedures on critically-ill patients to achieve adequate arterial and tissue oxygenation; maintain a patent airway; remove bronchopulmonary secretions; and provide adequate spontaneous and artificial ventilation and other appropriate RC procedures, equipment or therapies. 6. Protect patient from nosocomial infections by adherence to infection control policies and procedures when providing RC to patients in clinical settings.
Major Topics:	**I. Arterial blood gas interpretation in the critically-ill respiratory patient (27 hours, lecture)** A. Use of the a/A Ratio to predict accurate FIO2 needs of patients receiving oxygen. B. Understanding the generalizable basics of ventilator-patient interaction. C. Determining initial ventilator patient and alarm settings. **II. Maintain desired pH & PaCO2 during prolonged artificial ventilation of the critically-ill respiratory patient using FIO2, f, Vt, VE, VA, IFR, IE ratio, VD, etc. (18 hours, lecture)** **III. Managing the patient/ventilator system during prolonged artificial ventilation of the critically-ill respiratory patient (27 hours, lecture)** A. Preventing nosocomial infections in the critically-ill respiratory patient **IV. To-Be-Arranged Hours (216 hours, lab)** Monitoring, charting, delivering medications, resuscitation, suctioning, artificial ventilation and other respiratory techniques, therapy and equipment used as indicated in the respiratory care of patients a. Hospital intensive care units b. Emergency rooms c. In other appropriate locations as assigned
Total Lecture Hours:	72
Total Laboratory Hours:	216

Total Hours:	288
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	Patient's PaO2 comes back from lab at 55. Physician wants to increase FIO2 30% to get patient's PaO2 to 95. Patient is now on room air. Will 30% get PaO2 to 95? Answer in a one-page paper and if yes, show proof. If no, what FIO2 would you suggest, and show proof.
Critical Thinking Assignment 1:	Given access to the data of a critically-ill patient receiving life support, determine if ventilation and oxygenation goals are being met and identify or suggest modifications in ventilator settings. Submit to instructor in a one-page paper.
Critical Thinking Assignment 2:	Demonstrate and verbally explain how and why we check tracheostomy tube cuff pressure, and verbalize or identify appropriate actions based on the results of the cuff pressure measurement.
Other Evaluation Methods:	Class Performance, Completion, Fieldwork, Homework Problems, Laboratory Reports, Matching Items, Multiple Choice, Other Exams, Performance Exams, Quizzes, Reading Reports, Term or Other Papers, True/False, Written Homework
Instructional Methods:	Demonstration, Discussion, Group Activities, Guest Speakers, Lab, Lecture, Multimedia presentations, Role play/simulation
If other:	Alternate learning environments such as hospitals, clinics, health fairs, schools and other appropriate environments to provide supervised clinical and educational opportunities to students in class.
Work Outside of Class:	Answer questions, Journal (done on a continuing basis throughout the semester), Observation of or participation in an activity related to course content (such as theatre event, museum, concert, debate, meeting), Problem solving activity, Required reading, Skill practice, Study, Written work (such as essay/composition/report/analysis/research)
If Other:	Group active learning assignments simulating equipment situations that require information collection and decision making in order to solve malfunction problems and determine course of action.
Up-To-Date Representative Texts:	James Stoller. Egan's Fundamentals of Respiratory Care, 13th ed. Elsevier, 2024.
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	
Requisite:	Prerequisite
Category:	sequential
Requisite course(s): List both prerequisites and corequisites in this box.	Respiratory Care-176
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Interpret existing clinical data and determine the appropriateness of the prescribed respiratory care plan and participate in the development of the respiratory care plan.** RC 176 - Given existing clinical data, collect or recommend obtaining additional pertinent data relevant to a respiratory care plan. RC 176 - Given existing clinical data, suggest or identify appropriate actions to modify or

	develop a respiratory care plan. RC 176 - Evaluate and monitor patient's response to respiratory care and identify or verbalize appropriate action for a Respiratory Care Practitioner. **Explain planned therapy goals to the patient; maintain records and communicate relevant information to members of the health care team concerning the respiratory care plan.** RC 176 - 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. **For non-critically ill patients, conduct therapeutic procedures to achieve: 1. adequate arterial and tissue oxygenation 2. maintenance of a patent airway 3. removal of bronchopulmonary secretions 4. adequate spontaneous and artificial ventilation** RC 176 - Conduct ventilation and oxygenation procedures on non-critically ill patients to achieve adequate arterial and tissue oxygenation. RC 176 - Perform respiratory care procedures to maintain a patient's airway, remove bronchopulmonary secretions and provide adequate spontaneous and artificial ventilation. RC 176 - Evaluate and monitor patient's response to respiratory care and identify or verbalize appropriate action for a Respiratory Care Practitioner. **Evaluate and monitor patient's response to respiratory care and identify or verbalize appropriate action for the Respiratory Care Practitioner.** RC 176 - Evaluate and monitor patient's response to respiratory care and identify or verbalize appropriate action for a Respiratory Care Practitioner. **Protect patient from nosocomial infections by adherence to infection control policies and procedures.** RC 176 - Protect patients from nosocomial infections by adherence to infection control policies and procedures.
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Requisite course:	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Louis M. Sinopoli
Date:	07/30/2015
Original Board Approval Date:	12/01/1990
Last Reviewed and/or Revised by:	Roy Mekaru
Date:	03/22/2024
Last Board Approval Date:	06/17/2024
Effective Term:	FA 2025