Course Acronym:	RC
Course Number:	280
Descriptive Title:	Respiratory Care of the Critically III Patient II
Division:	Health Sciences and Athletics
Department:	Respiratory Care
Course Disciplines:	Respiratory Technologies
Catalog Description:	This course continues with the treatment and management of adult patients that are critically ill. The course provides the student with the opportunity to develop more complex reasoning and patient care skills. Problem-oriented use of patient data including intermediate respiratory care assessment and decision-making using blood gases, x-rays, response to therapy and other appropriate clinical indicators will be emphasized.
Prerequisite:	Respiratory Care 178 with a minimum grade of C
Co-requisite:	
Recommended Preparation:	
Enrollment Limitation:	
Hours Lecture (per week):	4
Hours Laboratory (per week):	15
Outside Study Hours:	8
Total Course Hours:	342
Course Units:	9
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 Explain Ventilator & Life Support 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 Life Support & Rehab for 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. Perform therapeutic procedures in the critically ill adult patient to achieve adequate arterial and tissue oxygenation, maintain a patent airway, remove bronchopulmonary secretions, and provide adequate spontaneous and artificial ventilation. 2. Identify subjective and objective indicators of effective therapeutic modalities while providing respiratory care for critically ill adult patients. 3. Based on patient's response to oxygen therapy, identify and/or verbalize the pulmonary defect causing the response and appropriate therapy. 4. Given access to appropriate patient information and a single or series of xrays, identify and/or verbalize an interpretation of the patient's condition and appropriate treatment. 5. Provided with inspiratory values, identify and/or verbalize peak and plateau pressures, the type of pulmonary resistance to ventilation present and appropriate treatment. 6. Protect patient from nosocomial infections by adherence to infection control policies and procedures during the prolonged ventilation of ICU patients and other patient care settings as appropriate. 7. Identify patients that require prolonged artificial ventilation and those who do not based on objective clinical respiratory care data. 8. Identify and suggest changes in the amount of artificial ventilatory support the patient needs based on stated or identified objective clinical respiratory care data.
Major Topics:	**I. The practice of respiratory care from a problem-oriented perspective including the Patient Oriented Medical Record (POMR) and its use in assessing patient, analyzing problem and proposing a therapeutic plan (8 hours, lecture)** A. Difference between hard data and soft data. B. What data is relevant to patient problems. C. Electronic Medical Record for SOAPing Patients. **II. Introduction and intermediate X-ray interpretation of chest films on Respiratory Care (RC) patients with common respiratory problems (12 hours, lecture)** A. Air/Tissue Ratios and the X-ray B. Neumothorax on X-Ray vs atelectasis C. Other Respiratory examples, pleurisy, emphysema, pulmonary edema & pneumonia **III. Intermediate oxygen therapy administration and evaluation of its effectiveness (14 hours, lecture)**

	A. Assessment using the results of arterial oxygen pressure and its response to oxygen inhalation to determine the type of pulmonary defect present. B. Based on the above assessment recommend modifications and appropriate treatment to patients receiving RC in clinical settings to include Intensive Care Units (ICU's) and Emergency Department (ED) etc. **IV. The initiation and weaning of ventilatory support from the adult critically-ill patient receiving prolonged artificial ventilation (14 hours, lecture)** A. Traditional adult ventilators such as PB-840, PB-7200, Viasys Avea B. Infant ventilators such as Maquet Servo 300 & ServoI C. non-invasive ventilators such as BI-Pap D. High frequency oscillating ventilation (HFOV) **V. Resistance to ventilation and objective determination of optimal positive end expiratory pressures (12 hours, lecture)** A. Determination of static and dynamic compliance based on peak inspiratory pressure (PIP) and plateau pressures B. Determine optimal positive end expiratory pressure (PEEP) pressures using PIP and plateau pressures C. Determine change in airway resistance and lung compliance using dynamic and static lung compliance measurements during prolonged artificial ventilation of the critically-ill respiratory patient **VI. Classification of artificial ventilators in order to predict the effect of changes in patient's pneumatic characteristics on oxygenation and ventilation (12 hours, lecture)** A. Predict changes in pressure, tidal volume, minute ventilation and other vital respiratory parameters as indicated. B. Determine the functionality of newly introduced ventilators clinical settings and nationally to RC departments and patient care units. C. Classify a ventilator on the four basic phases of artificial ventilation. **VII. TO BE ARRANGED HOURS (270 hours, lab)** Alternative learning settings to include hospitals, ICUs, emergency departments, clinics, and other appropriate clinical settings in order to provide respiratory care, education and/ or rehabilitation to patients, families and other health care professionals as assigned and appropriate. RC 280(Adult Floor Therapies) 1. Isolation 2. Charges 3. Chest assessment 4. Patient assessment 5. X-ray interpretation 6. Ultrasonic Nebulizer 7. Intrapulmonary Percussive Ventilation 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.
Total Lecture Hours:	72
Total Laboratory Hours:	270
Total Hours:	342
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)

Typical Assignment Using Primary Method of Evaluation:	7:00 am PIP - 30 Plateau - 25 PaO2 - 40 PEEP - 0 8:00 am PIP - 34 Plateau - 30 PaO2 - 65 PEEP - 5 9:00 am PIP - 38 Plateau - 33 PaO2 - 85 PEEP -10 10:00 am PIP - 45 Plateau - 40 PaO2 - 105 PEEP - 15 What PEEP pressure provides the best tissue oxygenation?
Critical Thinking Assignment 1:	Given access to data about patients' response to oxygen therapy, identify and/or verbalize the pulmonary defect present and the best way to treat it.
Critical Thinking Assignment 2:	After reviewing patient data, look at X-ray films and identify the patient's respiratory condition.
Other Evaluation Methods:	Class Performance, Essay Exams, Homework Problems, Laboratory Reports, Matching Items, Multiple Choice, Objective Exam, Performance Exams, Quizzes, 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 settings to include clinical rotations in ICUs, long-term ventilator care units, pulmonary rehabilitation clinics, health fairs and school visits for education of students with asthma.
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:	Clinical rotations through clinical affiliate hospitals and public service events as well as education of elementary school children with Asthma.
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-178
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	**Interpret arterial blood gases and classify according to clinical terms used in the management of patients on life support.** RC 178 - Interpret arterial blood gases and classify according to clinical terms used in the management of adult patients on life support. **Calculate FIO2 and PaO2 when given patient results at room air levels or higher to predict accurate changes.** RC 178 - When given patient results at room air levels or higher, calculate FIO2 and/or PaO2 as a result of requested changes. **Identify use, settings, problems and indications for all alarms and monitoring devices found on artificial ventilators.** RC 178 - Identify use, settings, problems and indications for all alarms and monitoring devices found on adult artificial ventilators.

	Identify and/or verbalize basic changes in FIO2, f, VT, VE, VA, IFR, IE ratio, VD etc., when given access to patient's ABG's, history, physical, and other appropriate information in order to manage patient ventilator interaction. RC 178 - 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. **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** RC 178 - 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.
Requisite Skill:	
Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable	
Requisite course:	
Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).	
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Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Louis M. Sinopoli
Date:	08/12/2015
Original Board Approval Date:	07/01/1990
Last Reviewed and/or Revised by:	Roy Mekaru
Date:	03/22/2024
Last Board Approval Date:	06/17/2024

Effective Term:	FA 2025