I. GENERAL COURSE INFORMATION

Subject and Number: Respiratory Care 291
Descriptive Title: Advanced Specialty Ventilators and Specialized Oxygen Delivery Devices
Course Disciplines: Respiratory Technologies
Division: Health Sciences and Athletics

Catalog Description:
This course provides instruction in specialty ventilators and oxygen delivery devices. Topics include high frequency oscillatory ventilation; high frequency jet ventilation; Vapotherm; SiPAP; and T-Piece Resuscitation. The indications, contraindications, and appropriate delivery will be discussed and reviewed for multiple patient populations.

Conditions of Enrollment:
Enrollment Limitation
Students must be admitted to the El Camino College Respiratory Care Program or be graduated from an accredited respiratory care program.

Course Length:	**X Full Term**	**Other (Specify number of weeks):**
Hours Lecture:	**2.00 hours per week**	**TBA**
Hours Laboratory:	**3.00 hours per week**	**X TBA**
Course Units:	**3.00**	

Grading Method: Letter
Credit Status: Associate Degree Credit

Transfer CSU: Yes **Effective Date: 07/19/2010**
Transfer UC: No **Effective Date:**

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 Competent Specialty Gas Administration
Students will be able to answer written questions, oral questions and perform procedures that demonstrate knowledge and ability to manage advanced ventilators and specialized oxygen administration devices to patients for various pulmonary disorders.

SLO #2 Explain or Demo Waveform Interpretation
During classes & labs, students will demonstrate and explain appropriate respiratory care ventilatory management techniques and competencies including the ability to interpret ventilatory waveforms and correctly monitor the patient receiving PAV.

SLO #3 Demonstrate Cognitive Knowledge of RC Specialty Ventilators & Gases
Students who stay in the course till the end of semester will take a comprehensive final multiple choice examination on use and monitoring of prolonged artificial ventilation oxygen delivery devices 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. Assess or describe the characteristics of each specialty ventilator and oxygen delivery device.
2. Differentiate between high frequency oscillatory ventilation and high frequency jet ventilation.
3. Assess when it is appropriate to utilize Vapotherm.
4. Classify Single Inspiration Positive Airway Pressue (SiPAP) and a T-Piece Resuscitator to other ventilators and oxygen delivery devices.
5. Identify when it is appropriate to place a patient on high frequency oscillatory ventilation verses high frequency jet ventilation.
6. Demonstrate how to switch a patient from one high frequency device to another.

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	Introduction to the High Frequency Ventilators and How They Differ
Lecture	8	II	High Frequency Oscillatory Ventilation A. Infants, pediatrics, and adults B. Indications C. Contraindications
Lecture	8	III	High Frequency Jet Ventilation A. Infants, pediatrics, and adults B. Indications C. Contraindications
Lecture	4	IV	Differences Between Oscillatory and Jet Ventilation A. Strategies B. Characteristics

Lecture	4	V	Clinical Assessment A. Auscultation of breath sounds B. Patient care issues
Lecture	3	VI	Removal and/or Transition Between Devices A. Decrease oxygen saturation B. Setting Mean Airway Pressure (MAP) from conventional ventilation C. Need for additional mechanical ventilation
Lecture	2	VII	Neonatal Options and Strategies A. Early intervention B. Pro-Active approach C. Rescue treatment
Lecture	2	VIII	Vapotherm A. Indications B. Contraindications C. Characteristics D. Set up and delivery E. Weaning
Lecture	2	IX	Single Inspiration Positive Airway Pressure (SiPAP) A. Indications B. Contraindications C. Characteristics D. Set up and delivery E. Weaning
Lecture	2	X	T-Piece Regulator A. Indications B. Contraindications C. Characteristics D. Set up and delivery E. Weaning
Lab	54	XI	TO BE ARRANGED HOURS CLINICAL LAB Monitoring, charting, resuscitation, suctioning, artificial ventilation and other respiratory techniques, therapy and equipment as indicated in the respiratory care of patients under their direct care in hospital intensive care units, emergency rooms and other appropriate locations as assigned.
Total Lecture Hours		36	
Total Laboratory Hours		54	
Total Hours		90	

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:

Write a 3-5 page report on a 32-week gestational, two-day-old patient with severe respiratory distress syndrome that is being unsuccessfully ventilated on conventional mechanical ventilation. Your paper should encompass the clinical findings for this patient, as well as the next appropriate ventilatory plan. The content of the report will include the type of ventilatory support you would provide, the initial settings, and the clinical outcomes that you would expect to see.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Using the information from the lecture, class discussion and your text, identify the disease state of the patient presented. Explain to the instructor what ventilator or oxygen delivery device would be appropriate for this patient and provide rationale for your choice.
2. In a one-page paper, explain the clinical benefits of using a T-Piece resuscitation versus manual positive pressure ventilation.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams
Other exams
Quizzes
Written homework
Class Performance
Homework Problems
Term or other papers
Multiple Choice
Completion
Matching Items
True/False

V. INSTRUCTIONAL METHODS

Demonstration
Discussion
Group Activities
Laboratory
Lecture
Multimedia presentations

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

Estimated Independent Study Hours per Week: 4

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

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification

D. Recommended Skills

Recommended Skills

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact
Students must be admitted to the El Camino College Respiratory Care Program or be graduated from an accredited respiratory care program.	Students begin the clinical phase (A.S. degree requirements) of the Respiratory Care program after being accepted into the program.

Course created by Salomay Corbaley on 04/23/2010

BOARD APPROVAL DATE: 07/19/2010

LAST BOARD APPROVAL DATE: 05/18/2020

Last Reviewed and/or Revised by: Roy Mekaru **Date: 02/02/2020**

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