



**I. GENERAL COURSE INFORMATION**

**Subject and Number:** Respiratory Care 293  
**Descriptive Title:** Cardiac Monitoring in Advanced Respiratory Care  
**Course Disciplines:** Respiratory Technologies  
**Division:** Health Sciences and Athletics

**Catalog Description:**

This course provides instruction in cardiac monitoring associated with advanced respiratory care. Topics include twelve-lead Electrocardiogram interpretation; central venous pressure; Pulmonary Artery Pressure, Cardiac Index; and usage of pressure transducers, pulmonary and arterial catheters, as well as treatment of cardiac conditions using electrolytes, cardiac medications and diuretics. Laboratory experiments and clinical visitation will be used to complement the didactic instruction.

**Conditions of Enrollment:**

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

|                          |                            |                                         |
|--------------------------|----------------------------|-----------------------------------------|
| <b>Course Length:</b>    | <b>X Full Term</b>         | <b>Other (Specify number of weeks):</b> |
| <b>Hours Lecture:</b>    | <b>3.00 hours per week</b> | <b>TBA</b>                              |
| <b>Hours Laboratory:</b> | <b>3.00 hours per week</b> | <b>X TBA</b>                            |
| <b>Course Units:</b>     | <b>4.00</b>                |                                         |

**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:**

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**CSU GE:**

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**IGETC:**

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## 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 Explain Advanced Cardiac Monitoring Techniques**

Students will be able to answer written questions, oral questions and perform procedures that demonstrate knowledge and ability to manage patients using advanced cardiac monitoring techniques in patients suffering from various pulmonary disorders.

#### **SLO #2 Respond appropriately to Cardiac Monitoring Data**

During classes & labs, students will demonstrate the ability to interpret cardiac monitor data and take or recommend the appropriate action according to AHA ACLS protocols.

#### **SLO #3 Demonstrate Cognitive Knowledge of Cardiac Monitoring**

Students who stay in the course till the end of semester will take a comprehensive final multiple choice examination on analyzing and interpreting cardiac monitoring data 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, along with a representative assessment method for each)

1. Collect and analyze pertinent clinical data associated with cardiac monitoring on live patients.
2. Identify procedures to obtain patient data using various types of hemodynamic monitoring equipment.
3. Verify and note any erroneous data or computations when using various forms of hemodynamic monitoring equipment.
4. Recommend alterations in cardiac treatment on live patients when indicated.
5. Interpret patient response to cardiac therapy.

## 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        | 4                 | I            | Central Venous Pressure<br>A. Measurement<br>B. Interpretation                   |
| Lecture        | 4                 | II           | Pulmonary Artery Pressure<br>A. Measurement<br>B Interpretation                  |
| Lecture        | 6                 | III          | Cardiac Index<br>A. Measurement<br>B Interpretation                              |
| Lecture        | 4                 | IV           | Pressure Transducers<br>A. Theory<br>B. Usage                                    |
| Lecture        | 4                 | V            | Pulmonary and Arterial Catheters<br>A. Operation<br>B. Interpretation of results |

|                        |    |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|----|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lecture                | 12 | VI   | Twelve Lead Electrocardiogram<br>A. Equipment operation<br>B. Interpretation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Lecture                | 4  | VII  | Electrolyte Management<br>A. Theory<br>B. Fluid delivery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Lecture                | 12 | VIII | Cardiac Medications<br>A. Theory<br>B. Indication<br>C. Hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Lecture                | 4  | IX   | Diuretics<br>A. Theory<br>B. Indication<br>C. Hazards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lab                    | 54 | X    | TO BE ARRANGED HOURS<br><br>Clinical Lab<br>Monitoring, charting, performing Twelve lead Electrocardiogram interpretation, Central Venous Pressure, Pulmonary Artery Pressure, Cardiac Index, usage of pressure transducers, pulmonary and arterial catheters as well as monitoring treatment of cardiac conditions using electrolytes, cardiac medications and diuretics, and equipment as indicated in the respiratory care of patients under students' direct care in hospital intensive care units, emergency rooms and other appropriate locations as assigned. |
| Total Lecture Hours    |    | 54   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Total Laboratory Hours |    | 54   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Total Hours            |    | 108  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

#### 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:

A 50-year-old male admitted to the Cardiac Care Unit has an electrocardiogram that shows he is in third degree heart block. He is currently on Lasix and Cardizem. Explain to instructor what tests should be run to determine if he is receiving proper medications, and if not, how should his therapy be altered?

##### C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

- 60-year-old female in the Emergency Department is admitted with angina. As you evaluate the patient, you see she has supraventricular tachycardia, as well as diaphoresis and numbness in her extremities. Explain to the instructor what you would recommend therapeutically and how you would evaluate for effectiveness.
- 45-year-old male presents in the Emergency Department with Cardiac Tamponade as a result of a deceleration trauma during a motor vehicle accident. His blood pressure is 60/45. He is given a

minimal dose of Nitroprusside and Dopamine intravenously. His blood pressure rises to 70/50. Explain to the instructor how much you can safely alter his dosages and what other data can be collected to help recommend any other procedures that could help further diagnose patient's condition.

**D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

- Performance exams
- Other exams
- Quizzes
- Written homework
- Laboratory reports
- Field work
- Class Performance
- Homework Problems
- Multiple Choice
- True/False

**V. INSTRUCTIONAL METHODS**

- Discussion
- Laboratory
- Lecture
- Multimedia presentations
- Role Play
- Simulation

**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
- Required reading
- Problem solving activities
- Written work

**Estimated Independent Study Hours per Week: 6**

**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 |
|-------------------------|----------------------------|
|-------------------------|----------------------------|

**D. Recommended Skills**

| Recommended Skills |
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**E. Enrollment Limitations**

| Enrollment Limitations and Category                                                                                                 | Enrollment Limitations Impact                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Students must be admitted to the El Camino College Respiratory 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 Roy Mearu on 04/23/2010**

**BOARD APPROVAL DATE: 07/19/2010**

**LAST BOARD APPROVAL DATE: 05/18/2020**

**Last Reviewed and/or Revised by: Roy Mearu**

**Date: 02/02/2020**

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