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| **Course Acronym:** | RC |
| **Course Number:** | 293 |
| **Descriptive Title:** | Cardiac Monitoring in Advanced Respiratory Care |
| **Division:** | Health Sciences and Athletics |
| **Department:** | Respiratory Care |
| **Course Disciplines:** | Respiratory Technologies |
| **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. |
| **Prerequisite:** | |
| **Co-requisite:** | |
| **Recommended Preparation:** | |
| **Enrollment Limitation:** | Students must be admitted to the El Camino College Respiratory Program or be graduated from an accredited respiratory care program. |
| **Hours Lecture (per week):** | 3 |
| **Hours Laboratory (per week):** | 3 |
| **Outside Study Hours:** | 6 |
| **Total Course Hours:** | 108 |
| **Course Units:** | 4 |
| **Grading Method:** | Letter Grade only |
| **Credit Status:** | Credit, degree applicable |
| **Transfer CSU:** | Yes |
| **Effective Date:** | 7-19-2010 |
| **Transfer UC:** | Yes |
| **Effective Date:** | |
| **General Education: ECC** | |
| **Term:** | |
| **Other:** | |
| **CSU GE:** | |
| **Term:** | |
| **Other:** | |
| **IGETC:** | |
| **Term:** | |

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| **Other:** | |
| **Student Learning Outcomes:** | **SLO #1 Explain Advanced Cardiac Monitoring Techniques**<br><br>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.<br>**SLO #2 Respond appropriately to Cardiac Monitoring Data**<br><br>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.<br>**SLO #3 Demonstrate Cognitive Knowledge of Cardiac Monitoring**<br><br>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. |
| **Course Objectives:** | 1. Collect and analyze pertinent clinical data associated with cardiac monitoring on live patients.<br>2. Identify procedures to obtain patient data using various types of hemodynamic monitoring equipment.<br>3. Verify and note any erroneous data or computations when using various forms of hemodynamic monitoring equipment.<br>4. Recommend alterations in cardiac treatment on live patients when indicated.<br>5. Interpret patient response to cardiac therapy. |
| **Major Topics:** | **I. Central Venous Pressure (4 hours, lecture)**<br>A. Measurement<br>B. Interpretation<br>**II. Pulmonary Artery Pressure (4 hours, lecture)**<br>A. Measurement<br>B. Interpretation<br>**III. Cardiac Index (6 hours, lecture)**<br>A. Measurement<br>B. Interpretation<br>**IV. Pressure Transducers (4 hours, lecture)**<br>A. Theory<br>B. Usage<br>**V. Pulmonary and Arterial Catheters (4 hours, lecture)**<br>A. Operation<br>B. Interpretation of results<br>**VI. Twelve Lead Electrocardiogram (12 hours, lecture)**<br>A. Equipment operation<br>B. Interpretation<br>**VII. Electrolyte Management (4 hours, lecture)**<br>A. Theory<br>B. Fluid delivery<br>**VIII. Cardiac Medications (12 hours, lecture)**<br>A. Theory<br>B. Indication<br>C. Hazards<br>**IX. Diuretics (4 hours, lecture)**<br>A. Theory<br>B. Indication<br>C. Hazards |

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| | **X. Clinical Lab TO BE ARRANGED HOURS (54 hours, 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 |
| **Primary Method of Evaluation:** | 2) Problem solving demonstrations (computational or non-computational) |
| **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 the instructor what tests should be run to determine if he is receiving proper medications, and if not, how should his therapy be altered? |
| **Critical Thinking Assignment 1:** | A 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. |
| **Critical Thinking Assignment 2:** | A 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.<br><br>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. |
| **Other Evaluation Methods:** | Class Performance, Fieldwork, Homework Problems, Laboratory Reports, Multiple Choice, Other Exams, Performance Exams, Quizzes, True/False, Written Homework |
| **Instructional Methods:** | Discussion, Lab, Lecture, Multimedia presentations, Role play/simulation |
| **If other:** | |
| **Work Outside of Class:** | Problem solving activity, Required reading, Study, Written work (such as essay/composition/report/analysis/research) |
| **If Other:** | |
| **Up-To-Date Representative Texts:** | James Stoller. Fundamentals of Respiratory Care. 13th ed. Elsevier, 2024. |
| **Alternative Texts:** | |
| **Required Supplementary Readings:** | |
| **Other Required Materials:** | |
| **Requisite:** | |
| **Category:** | |

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| **Requisite course(s): List both prerequisites and corequisites in this box.** | |
| **Requisite and Matching skill(s):Bold the requisite skill. List the corresponding course objective under each skill(s).** | |
| **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).** | |
| **Requisite Skill:** | |
| **Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable** | |
| **Enrollment Limitations and Category:** | Students must be admitted to the El Camino College Respiratory Program or be graduated from an accredited respiratory care program. |
| **Enrollment Limitations Impact:** | Students begin the clinical phase (A.S. degree requirements) of the Respiratory Care program after being accepted into the program. |
| **Course Created by:** | Roy Mekaru |
| **Date:** | 08/13/2015 |
| **Original Board Approval Date:** | 07/19/2010 |
| **Last Reviewed and/or Revised by:** | Roy Mekaru |
| **Date:** | 03/22/2024 |
| **Last Board Approval Date:** | 06/17/2024 |
| **Effective Term:** | FA 2025 |