Respiratory Care

Overview

This degree is preparation for licensure as a Respiratory Care Practitioner in the state of California as a Respiratory Care Practitioner at the Advanced Registered Respiratory Therapist level. It focuses on diagnostic procedures, treatment, and management of patients with conditions affecting the cardiopulmonary system. Course work includes physical assessment, medical gas therapies, mechanical life support, airway care, pharmacology, neonatal/pediatric therapy, and specialized cardiopulmonary procedures. All degree major courses require a grade of “C” or better to remain in the program.

ARC’s Respiratory Care Program is designed to prepare California licensed respiratory care practitioners at the registered respiratory therapist level. It focuses on diagnostic procedures, treatment, and management of patients with conditions affecting the cardiopulmonary system. The respiratory care practitioner works closely with the physician in assessing the patient and planning the proper respiratory care protocol.

The Respiratory Care curriculum is a two-year program designed to prepare the student for employment and to participate as a member of the healthcare team by providing direct patient care. Experience in respiratory care is provided in selected local hospitals where the student participates in clinical externships. Safe, ethical, and professional levels of practice are necessary for retention of students in the Respiratory Care Program.

The program is accredited by the Commission on Accreditation for Respiratory Care (CoARC) [https://www.coarc.com/], P.O. Box 54876, Hurst, TX 76054-4876, (817) 283-2835.

*The American River College Respiratory Care Program will prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by Registered Respiratory Therapists (RRTs).* [CoARC Programmatic Outcome Data](https://coarc.com/Students/Programmatic-Outcome-Data.aspx)

Respiratory Care Student Handbook [https://docs.google.com/document/d/1TDgay_Gn_BA3ympOxswEllJsVLkS5cSczgwpWddC/edit?usp=sharing]

Roadmaps

Roadmaps lay out all of the courses you need to take for a given degree or certificate.

Get a Roadmap! Explore Ways to Complete These Programs [academics/arc-program-road-maps]

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Associate Degree

A.S. in Respiratory Care

This degree is preparation for licensure as a Respiratory Care Practitioner in the state of California as a Respiratory Care Practitioner at the Advanced Registered Respiratory Therapist level. It focuses on diagnostic procedures, treatment, and management of patients with conditions affecting the cardiopulmonary system. Course work includes physical assessment, medical gas therapies, mechanical life support, airway care, pharmacology, neonatal/pediatric therapy, and specialized cardiopulmonary procedures.

All degree major courses require a grade of "C" or better to remain in the program.

Catalog Date: January 1, 2021

Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-RC Semesters:</td>
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<tr>
<td>AH 110</td>
<td>Medical Language for Health-Care Providers</td>
<td>3</td>
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<tr>
<td>BIOL 430</td>
<td>Anatomy and Physiology</td>
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<td>BIOL 431</td>
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<tr>
<td>BIOL 440</td>
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<tr>
<td>or BIOL 442</td>
<td>General Microbiology and Public Health (5)</td>
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<tr>
<td>PHYS 310</td>
<td>Conceptual Physics (3)</td>
<td>3 - 4</td>
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<tr>
<td>or PHYS 350</td>
<td>General Physics (4)</td>
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<tr>
<td>First Semester:</td>
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</tr>
<tr>
<td>RC 110</td>
<td>Cardiopulmonary Pathologies for Respiratory Care</td>
<td>3</td>
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<tr>
<td>RC 111</td>
<td>Principles of Respiratory Care</td>
<td>8</td>
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<tr>
<td>Second Semester:</td>
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<tr>
<td>RC 121</td>
<td>Concepts of Airway Care &amp; Mechanical Ventilation</td>
<td>4</td>
</tr>
<tr>
<td>RC 122</td>
<td>Airway Care &amp; Mechanical Ventilation Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>RC 123</td>
<td>Clinical Externship I</td>
<td>3</td>
</tr>
<tr>
<td>RC 124</td>
<td>Respiratory Care Pharmacology</td>
<td>3</td>
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<td>Third Semester:</td>
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<tr>
<td>RC 130</td>
<td>Respiratory Care in Neonatal and Pediatric Populations &amp; Diagnostic Studies</td>
<td>3</td>
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<tr>
<td>RC 131</td>
<td>Respiratory Care in Neonatal and Pediatric Populations &amp; Diagnostic Studies Laboratory</td>
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<tr>
<td>RC 132</td>
<td>Clinical Externship II</td>
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<td>Fourth Semester:</td>
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<tr>
<td>RC 140</td>
<td>Professional Development in Respiratory Care</td>
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</table>
Respiratory Care (RC) Courses

RC 110 Cardiopulmonary Pathologies for Respiratory Care

Units: 3
Hours: 54 hours LEC
Prerequisite: None.
Corequisite: RC 111
Enrollment Limitation: Acceptance into the Respiratory Care Program.
Advisory: Eligible for ENGRD 310 or ENGRD 312 AND ENGWR 300; OR ESLR 340 AND ESLW 340.
Catalog Date: January 1, 2021
This course introduces the common pathologies affecting the cardiopulmonary system and related pharmacological treatment. Topics include obstructive and restrictive airway diseases, early childhood respiratory diseases, infectious pulmonary diseases, and pulmonary vascular diseases.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify and relate common developmental pathologies.
- catalog pulmonary diseases as obstructive or restrictive.
- recommend diagnostic procedures for identification and staging of cardiopulmonary disease.
- analyze data collected from various diagnostic procedures including x-ray, arterial blood gases, and pulmonary function tests.
- compile data for development of therapist driven protocols.
- analyze disease states and pharmatherapeutic strategies.
- define categories of drugs and apply appropriate category to various cardiopulmonary disease states.
- recommend appropriate pharmacological intervention for cardiopulmonary pathologies.

RC 111 Principles of Respiratory Care

<table>
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<th>Units:</th>
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<tr>
<td>Hours:</td>
<td>126 hours LEC; 54 hours LAB</td>
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<tr>
<td>Prerequisite:</td>
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<tr>
<td>Corequisite:</td>
<td>RC 110</td>
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<td>Enrollment Limitation:</td>
<td>Acceptance into the Respiratory Care Program.</td>
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<tr>
<td>Advisory:</td>
<td>Eligible for ENGRD 310 or ENGRD 312 AND ENGRWR 300; OR ESLR 340 AND ESLW 340.</td>
</tr>
<tr>
<td>Catalog Date:</td>
<td>January 1, 2021</td>
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</table>

This course introduces critical thinking skills necessary for entry into clinical practice in respiratory care. It includes a comprehensive overview of the cardiopulmonary system with emphasis on applied physiology. Additionally, it covers ventilation, gas transport, gas exchange, and acid-base balance, including interpretation of data and the relationship of therapeutics to physiological principles. Respiratory care equipment, patient assessment skills, safe practices, such as the Health Insurance Portability and Accountability Act (HIPAA), human rights and privacy, personal health and hygiene, and hospital orientations are introduced. This course is preparation for general practice as a respiratory care practitioner. It covers laboratory skills and procedures with emphasis on the application of theories and techniques related to assessment, evaluation, and interpretation of patients with cardiopulmonary illness. Included are concepts of Basic Life Support. Field trips may be required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- evaluate the difference between the mechanical and metabolic work involved in ventilation and perfusion and their significance in patient care.
- explain compensatory mechanisms in human physiology in the presence of disease.
- demonstrate patient assessment skills and related therapeutics.
- analyze information received from patients' records and tests.
- measure the mechanisms by which oxygen and carbon dioxide are transported in the blood and the factors affecting that transport to and from the tissues and apply the data to patient care situations.
- evaluate electrolyte and acid base regulation in relationship to kidney function.
- correlate acid base regulation and the control of ventilation.
- analyze how the cardiovascular system coordinates its functions under normal and abnormal conditions.
- compare and contrast various respiratory care procedures and equipment.
- draft an appropriate plan for correction of various forms of cardiovascular disease.
- explain the role of HIPAA in the respiratory care field.
- identify two methods to ensure proper patient identification.
- explain the importance of the patient's right to privacy.
- recognize examples of inappropriate conversation topics.
- formulate an appropriate plan for safe practice and preventing spread of infection.
- demonstrate verbal, nonverbal, and written communications skills in patient interactions.
- recommend appropriate treatment modalities for patients affected by cardiopulmonary disease.
- create respiratory care treatment plans for patients affected by cardiopulmonary disease.
- identify and assemble respiratory care equipment for application in treating oxygen failure.
- assess patient responses to oxygen therapies.
- interpret cardiopulmonary diagnostic test results and recommend appropriate modifications to treatment plans.
- demonstrate appropriate blood gas draw procedure and knowledge to successfully obtain the blood gas certificate.
- cite drugs and preparation utilized in the management of respiratory disease.

RC 121 Concepts of Airway Care & Mechanical Ventilation

<table>
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<th>Units:</th>
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<tbody>
<tr>
<td>Hours:</td>
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<tr>
<td>Prerequisite:</td>
<td>RC 110 and 111 with grades of &quot;C&quot; or better</td>
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<tr>
<td>Corequisite:</td>
<td>RC 122, 123, and 124</td>
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<td>Catalog Date:</td>
<td>January 1, 2021</td>
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This course expands on the principles of respiratory failure, airway protective techniques, and advanced life support. Topics include mechanical ventilator theories and modes, invasive and noninvasive airway care, and Advanced Cardiac Life Support (ACLS) procedures.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- identify signs and symptoms of respiratory failure.
- demonstrate appropriate treatment of respiratory failure.
- clear an obstructed airway.
- compile a list of equipment utilized in the intubation process.
- list modes of mechanical ventilation.
assess patients for weaning readiness from mechanical ventilation.
• analyze mechanical ventilator data and modify therapy.
• troubleshoot various mechanical ventilator problems.
• cite the basic parameters of ventilation.
• construct a ventilator record or flow sheet.

RC 122 Airway Care & Mechanical Ventilation Laboratory

Student Learning Outcomes

Upon completion of this course, the student will be able to:
• identify adjunctive airway and intubation equipment.
• establish effective airway techniques and perform intubations.
• select mechanical ventilators and assess for proper function.
• troubleshoot mechanical ventilators.
• interpret mechanical ventilator and hemodynamic wave forms.
• collect mechanical ventilator data and construct flow sheets.
• diagnose respiratory failure.
• differentiate types of artificial airways and mechanical ventilators.

RC 123 Clinical Externship I

Student Learning Outcomes

Upon completion of this course, the student will be able to:
• analyze information received from patients, records, and tests.
• select and recommend appropriate drugs and preparations utilized in the management of respiratory disease.
• adapt respiratory care equipment to meet a patient's oxygen therapy needs.
• apply evaluation skills to identification of various pathologies.
• explain the rationale for various respiratory care procedures.
• perform technical skills common to care of the critically ill.
• assess a patient’s response to therapy.
• assemble appropriate equipment for therapeutic procedures.

RC 124 Respiratory Care Pharmacology

Student Learning Outcomes

Upon completion of this course, the student will be able to:
• describe principles of drug actions
• explain the pharmaceutical theory of drug therapy
• cite preferred methods of administration of drugs
• identify drugs utilized for prevention of pulmonary disease
• analyze disease states and pharamatherapeutic strategies
• recommend appropriate pharmacological intervention for various cardiopulmonary pathologies
• interpret the appropriateness of drug intervention
RC 130 Respiratory Care in Neonatal and Pediatric Populations & Diagnostic Studies

This course prepares students to work in laboratories and special care areas of a hospital. Topics include perinatal and pediatric diseases, labor and delivery, rehabilitation, and advanced diagnostic studies performed by respiratory therapists. Additional topics include bronchoscopy, advanced pulmonary function studies, bronchial provocation testing, polysomnography, exercise stress tests, metabolic studies, hemodynamic measurements, advanced modalities of mechanical ventilation, and cardiovascular testing.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- differentiate the methods of assessing the newborn infant, including maternal and fetal factors.
- describe the hazards and indications for special equipment, application, and techniques applied to infants and children.
- describe the etiology, pathophysiology, clinical manifestations, and treatment of selected neonatal and pediatric diseases.
- analyze the process of cardiopulmonary rehabilitation including program form, content, and outcome evaluation, patient assessment for selection into a program, exercise evaluation, and preparation of a respiratory care plan.
- analyze the modalities and equipment available for cardiopulmonary rehabilitation, exercise, reconditioning, breathing retraining, as well as long term oxygen and ventilation care.
- select and evaluate the delivery of respiratory care in the home setting including assessment of the home environment, patient comprehension of treatment modalities, equipment, and infection control.
- recommend appropriate reconditioning exercises and rehabilitation programs for the outpatient client.
- analyze and recommend appropriate advanced mechanical ventilation strategies.

RC 131 Respiratory Care in Neonatal and Pediatric Populations & Diagnostic Studies Laboratory

This course prepares students for general practice as respiratory care practitioners. It provides laboratory practice in medical gas, humidity/aerosol, hyperinflation and bronchial hygiene therapies, airway management, and non-invasive and invasive mechanical ventilatory support as applied to neonatal and pediatric patients in specialized critical care units. Additionally, it covers pulmonary rehabilitation techniques, cardiopulmonary stress testing, sleep studies, and respiratory care techniques in the home setting. Field trips may be required. Students must successfully complete the National Board for Respiratory Care Self Assessment Examinations to receive a passing grade in this course. Students are responsible for fees associated with this examination.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- monitor hemodynamic values of patients undergoing special procedures.
- assess performance of patients before during and after special procedures.
- troubleshoot equipment malfunctions.
- analyze results of tests performed.
- discuss abnormal findings from examinations performed.
- chart patient progress.
- assemble equipment to perform various procedures.
- select and recommend drugs, gases, and preparations utilized in respiratory and diagnostic laboratories.
- assemble pediatric ventilators.
- apply pediatric ventilators.
- assess health status of newborn infants.
- develop appropriate care plans.
- coordinate rehabilitation activities.

RC 132 Clinical Externship II

This is a preparatory course for advanced practice as respiratory care practitioners. Topics include clinical practice in application of non-invasive and invasive mechanical ventilatory support, ventilator settings/adjustments, monitoring, adjusting ventilators to improve oxygenation and/or ventilation and discontinuance from mechanical ventilatory support. Clinical experience is provided in regional hospitals and clinics. A portion of this course may be offered with a TBA component which may include working in clinical sites.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- monitor patient care in critical care units.
- evaluate patients in critical care units.
• assess ventilation disorders.
• troubleshoot mechanical ventilator problems.
• perform technical skills common to care of the critically ill.
• collect and analyze blood and tissue samples from critically ill patients.
• report on patient status to physicians and co-workers.
• record critical data in patient records.
• chart patient progress.
• collect and evaluate diagnostic data to include chest radiography, electrocardiography, pulmonary function testing, and laboratory studies.

RC 140 Professional Development in Respiratory Care

Units: 2
Hours: 36 hours LEC
Prerequisite: RC 130, 131, and 132 with grades of "C" or better
Corequisite: RC 142
Catalog Date: January 1, 2021

This course prepares students for transition into professional practice. Topics include ethical behaviors, resume writing, and professional attributes and dress for the respiratory care setting. Interviewing skills, professional test preparation for state and national licensing examinations, and practice examinations for the National Board of Respiratory Care's Therapist Multiple-Choice Examination and Clinical Simulation Self Assessment Examinations are also covered.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

• describe appropriate business attire for respiratory care professionals working outside the hospital environment.
• write an effective resume for employment in respiratory care.
• compose a letter of introduction for future employment.
• schedule an interview with a potential employer.
• discuss interviewing principles in relation to employment in respiratory care.
• complete job and licensing applications for respiratory care practice.
• assess preparation for state and national testing standards.
• discuss appropriate business practices for respiratory care practitioners working in home care.
• explain the Respiratory Care Practice Act as it relates to delivery of respiratory home care.
• describe the advanced practice examination system for Registered Respiratory Therapist.

RC 142 Clinical Externship III

Units: 6
Hours: 324 hours LAB
Prerequisite: RC 130, 131, and 132 with grades of "C" or better
Corequisite: RC 140
Enrollment Limitation: Meet the health requirements of the Los Rios Community College District for Allied Health Programs and certification in Pediatric Advanced Life Support and Neonatal Resuscitation Program.
Catalog Date: January 1, 2021

This course prepares for advanced practice of respiratory care. Topics include labor and delivery, neonatal intensive care, cardiac and medical intensive care, medical trauma management, application of pulmonary rehabilitation techniques, cardiopulmonary stress testing, sleep studies, and respiratory care techniques in the home setting. Additional topics include case studies in medical management. Field trips are required.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

• monitor hemodynamic values of patients in critical care units.
• evaluate hemodynamic values of patients in critical care units.
• assess performance of mechanical ventilators.
• troubleshoot mechanical ventilation problems.
• perform technical skills common to care of the critically ill.
• collect blood and tissue samples from critically ill patients.
• analyze blood and tissue samples from critically ill patients.
• report on patient status to physicians and co-workers.
• record critical data in patient records.
• chart patient progress.
• demonstrate correct application of therapeutic procedures to neonatal and pediatric patients.
• evaluate, assess, and modify neonatal and pediatric airways and therapy.

RC 295 Independent Studies in Respiratory Care

Units: 1 - 3
Prerequisite: None.
Catalog Date: January 1, 2021

RC 299 Experimental Offering in Respiratory Care

Units: 0.5 - 4
Prerequisite: None.
Catalog Date: January 1, 2021
Faculty

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ARC - Respiratory Care Program

EXPLORE RESPIRATORY CARE ➤ (/ACADEMICS/ARC-RESPIRATORY-CARE)