

# RESPIRATORY CARE (RC)

## RC 110 Foundations of Respiratory Care

3 Class Hours, 2 Lab Hours, 4 Quarter Credit Hours

This course provides an orientation to respiratory care and healthcare organizations. Topics will include the history of respiratory care and the development of the profession's core values and ethics, the respiratory therapist's role in patient assessment, education, and the promotion of wellness within diverse patient populations and communities. An overview of healthcare reimbursement, credentialing, licensure, accreditation, and evidence-based practices will be included.

## RC 111 Introduction to Respiratory Care Clinical

1 Class Hours, 2 Lab Hours, 2 Quarter Credit Hours

This course prepares students for their clinical experience. Topics will include an orientation to clinical concepts such as pre-employment screening, background checks, immunizations, professionalism, ethics, diversity, effective communication, medical record review and charting, workplace safety, disease transmission and infection control practices, patient assessment skills, and patient confidentiality. Students will be provided the opportunity to take the American Heart Association Cardiopulmonary Resuscitation Healthcare Provider certification (CPR-C).

## RC 120 Principles of Cardiopulmonary Physiology

3 Class Hours, 3 Quarter Credit Hours

Prerequisites: RC 110 and RC 111 and BIO 100 and BIO 101 and (MA 100 or MA 110)

This course provides an in-depth analysis of the circulatory physiology of the heart and lungs. Applied respiratory chemistry, physical properties of fluids and gases, pulmonary mechanics, hematology, hemodynamics, and renal function will be included. Cardiopulmonary diagnostics and therapeutics such as pulmonary function testing, bronchoscopy, central venous lines, pulmonary artery catheters, arterial blood gases, electrocardiograms (ECGs), and cardiac arrhythmias will be introduced.

## RC 121 Respiratory Care Pharmacology

1 Class Hours, 2 Lab Hours, 2 Quarter Credit Hours

Prerequisites: RC 110 and RC 111 and BIO 100 and BIO 101 and (MA 100 or MA 110)

This course focuses on the assessment, administration, and patient education associated with the safe delivery of pharmacological agents specific to the cardiopulmonary system. Drug classifications, dosage calculations, indications, and contraindications will be covered. Students will learn how to select the appropriate pharmacological agents, administer the agents utilizing the appropriate equipment and technique, and apply pre-, peri-, and post-assessment skills to determine the effectiveness and/or adverse effects associated with the treatment.

## RC 130 Theory & Application of Respiratory Care I and Lab

3 Class Hours, 4 Lab Hours, 5 Quarter Credit Hours

Prerequisites: RC 120 and RC 121 and BIO 120 and BIO 121

Corequisites: RC 131

This course prepares students with the basic knowledge and skills for holistic patient assessment, diagnostic, and therapeutic modalities. Students will learn the fundamentals of evidence-based respiratory care assessment, protocols, and the safe use of equipment. Topics will include oxygen, humidification and aerosol therapies, airway management, manual ventilation, hyperinflation and bronchopulmonary hygiene procedures, noninvasive monitoring, and laboratory data analysis.

## RC 131 Respiratory Care Clinical I

12 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RC 120 and RC 121 and BIO 120 and BIO 121

Corequisites: RC 130

This entry Level I respiratory care practicum will allow students to develop the basic knowledge, skills, and core competencies introduced in the RC courses through observation and hands-on clinical experience. Students will perform evidence-based practices established by current clinical practice guidelines and published research.

## RC 132 Respiratory Care Pathophysiology I

3 Class Hours, 3 Quarter Credit Hours

Prerequisites: RC 120 and RC 121 and BIO 120 and BIO 121

Corequisites: BIO 122

This course provides students with the knowledge and critical thinking skills needed to effectively assess and treat patients with respiratory diseases including obstructive and restrictive disorders. Students will analyze clinical patient data and recommend the appropriate diagnostic and therapeutic procedures. Students will learn to develop patient care plans, respiratory care protocols, and disease management models.

## RC 240 Theory & Application of Respiratory Care II & Lab

3 Class Hours, 4 Lab Hours, 5 Quarter Credit Hours

Prerequisites: RC 130 and RC 131 and RC 132 and BIO 122

Corequisites: RC 241

This course prepares students with more advanced knowledge and skills for holistic patient assessment, diagnostic, and therapeutic modalities. Students will develop more in-depth patient assessment skills utilizing both invasive and noninvasive procedures such as intubation, arterial blood gases, pulmonary function testing, pulse-oximetry, transcutaneous monitoring, capnography, bronchoscopy, central venous lines, pulmonary artery catheters, ECGs, and medical imaging.

## RC 241 Respiratory Care Clinical II

12 Lab Hours, 4 Quarter Credit Hours

Prerequisites: RC 130 and RC 131 and RC 132 and BIO 122

Corequisites: RC 240

This continuation of the entry Level I respiratory care practicum will allow students to develop more advanced knowledge, skills, and core competencies introduced in the RC courses through observation and hands-on clinical experience. Students will perform evidence-based practices established by current clinical practice guidelines and published research.

## RC 242 Respiratory Care Pathophysiology II

3 Class Hours, 3 Quarter Credit Hours

Prerequisites: RC 130 and RC 131 and RC 132 and BIO 122

This course is a continuation of RC 132 with an emphasis on adult critical care, pediatric, and neonatal respiratory disorders. Students will analyze clinical patient data and recommend the appropriate diagnostic and therapeutic procedures. Students will learn to develop patient care plans, respiratory care protocols, and disease management models.

**RC 252 Theory & Application of Respiratory Care III & Lab**

3 Class Hours, 4 Lab Hours, 5 Quarter Credit Hours

Prerequisites: RC 240 and RC 241 and RC 242

Corequisites: RC 253

This course provides an in-depth analysis of invasive and noninvasive mechanical ventilation. Students will develop the critical thinking and problem-solving skills needed to provide adequate ventilatory support to patients with cardiopulmonary disorders. Students will learn how to assess, monitor, and manage patients utilizing various modes of ventilation. Topics will include the indications and initiation of mechanical ventilation, the safe assembly and operation of positive pressure ventilation equipment, modes of mechanical ventilation, weaning, and the discontinuation of ventilatory support. Students will take a simulated entry-level preparation exam by the National Board of Respiratory Care (NBRC).

**RC 253 Respiratory Care Clinical III**

18 Lab Hours, 6 Quarter Credit Hours

Prerequisites: RC 240 and RC 241 and RC 242

Corequisites: RC 252

This advanced Level II respiratory care practicum will allow students to develop advanced knowledge, skills, and core competencies introduced in the RC courses through observation and hands-on clinical experience. Students will perform evidence-based practices established by current clinical practice guidelines and published research in critical care environments.

**RC 254 Specialty Principles & Practice of Respiratory Care**

2 Class Hours, 2 Quarter Credit Hours

Prerequisites: RC 240 and RC 241 and RC 242

This course focuses on the advanced and specialty practices of respiratory care such as Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), Neonatal Resuscitation (NR), and extracorporeal membrane oxygenation (ECMO). Advanced modes of mechanical ventilation for the adult, pediatric, and neonatal patient populations will be included.

**RC 261 Theory & Application of Respiratory Care IV & Lab**

3 Class Hours, 4 Lab Hours, 5 Quarter Credit Hours

Prerequisites: RC 252 and RC 253 and RC 254

Corequisites: RC 262

This course provides students with the knowledge and skills to practice respiratory care in neonatology, polysomnography, homecare, chronic care, and rehabilitation. A senior capstone project and simulated advanced-level preparation exam by the NBRC will be included.

**RC 262 Respiratory Care Clinical IV**

24 Lab Hours, 8 Quarter Credit Hours

Prerequisites: RC 252 and RC 253 and RC 254

Corequisites: RC 261

This advanced and specialty Level II respiratory care practicum will allow students to develop advanced and specialty knowledge, skills, and core competencies introduced in the RC courses through observation and hands-on clinical experience. Students will perform evidence-based practices established by current clinical practice guidelines and published research on the adult, pediatric, and neonatal patient populations within the critical care, homecare, chronic care, polysomnography, and rehabilitation care environments.

**RC 426 Advanced Cardiopulmonary Management 1**

4 Class Hours, 4 Quarter Credit Hours

This course will provide an in-depth analysis of advanced cardiopulmonary diagnostic, therapeutic, and management strategies in general and respiratory critical care. Topics will include the management of difficult airways, administration of specialty gases, advanced techniques to enhance oxygenation and ventilation, delivery of pharmacological agents, and assessment of the change in status of the critically ill patient. Other topics will include the prevention of ventilator-associated events and troubleshooting, recognition and treatment of sepsis, hospice and palliative care, as well as the preparation for disaster and mass casualty events.

**RC 436 Advanced Cardiopulmonary Management 2**

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: RC 426

This course provides students with the knowledge and critical thinking skills needed to effectively assess and manage patients across the continuum of healthcare utilizing a holistic approach. Students will learn how to assess the status of critically ill patients and anticipate changes in patient status as members of an interdisciplinary healthcare team. Students will develop advanced patient care plans based on the interpretation of laboratory and imaging reports. Students will examine the effects of pharmacological agents and anticipate the complications associated with the nutritional status of the patient. Students will be introduced to specialty certifications related to advanced adult, pediatric, and neonatal respiratory care practice.