

# DEPARTMENT OF RESPIRATORY CARE

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Round Rock Campus

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[www.health.txstate.edu/rc](http://www.health.txstate.edu/rc) (<http://www.health.txstate.edu/rc>)

The Bachelor of Science in Respiratory Care (BSRC) degree prepares students to practice as respiratory care professionals and take their place as a key healthcare team member. Skilled in assessing patients with breathing disorders in the emergency room, intensive care units and many other areas in healthcare facilities, respiratory therapists work directly with physicians on newborn, pediatric or adult patients to analyze oxygen levels and breathing difficulty. Therapists administer medications to relieve breathing distress, provide pulmonary/lung therapies, and conduct lung diagnostics for all ages. Graduates find employment in many settings such as hospitals, pulmonary rehabilitation clinics, doctors' offices, sleep labs, homecare, and air-life transport teams working with patients in the emergency room, newborn/pediatric/adult intensive care units, and many other areas.

Respiratory care (RC) majors take lab and lecture classes on the Round Rock campus and gain clinical experience in Austin-area hospitals. Students successfully admitted to the program must complete the sequenced curriculum within the cohort group. Individuals taking core courses prior to applying for admission to the RC program should contact the College of Health Professions' Advising Office. The BSRC Program is accredited by the Commission on Accreditation for Respiratory Care (CoARC) and qualifies graduates to sit for national board credentialing exams to become a Registered Respiratory Therapist (RRT) through the National Board for Respiratory Care immediately upon completion.

Students having already completed an associate degree in Respiratory Care from another university or college are eligible to apply for admission to the BSRC Online Completion Program at Texas State for bachelor degree completion. This 100% online program allows student admission every fall, spring, and summer semester without the need to come to the Texas State campus. The online degree completion program features 8-week courses and has a program completion time of one year for a full-time student. For information on this option, please contact the program chair.

The department also offers a Master of Science in Respiratory Care (MSRC) degree with concentrations in Leadership and Polysomnography Technology (sleep diagnostics). The Polysomnography (PSG) program prepares individuals to sit for national board credentialing exams immediately upon completion. The PSG concentration is comprised of five courses (12 credit hours) with courses offered each fall, spring, and summer. Individuals credentialed in PSG provide diagnostic and therapeutic treatment for those suffering from sleep disorders such as obstructive sleep apnea, insomnia, narcolepsy, and other conditions. Admission to the MSRC program requires the applicant to have previously earned the RRT credential and completed a bachelor's degree from a regionally accredited institution. Students may be admitted to the MSRC program every fall, spring and summer with completion in

four semesters. Please refer to The Graduate catalog for admission requirements and course descriptions.

## Immunization Requirements

It is a policy of the College of Health Professions that each student must provide the College Health Report completed by a physician or licensed healthcare provider and must complete specific immunizations before being placed in a clinical or internship assignment. Information on these requirements and forms may be obtained through the departmental office.

## Background Checks and Drug Screening

As a condition for placement in some professional practice sites, all students are required to have a background check and/or drug screening to meet requirements of individual sites. Information on the drug screening process will be provided by the department to clinical facilities as required. Previous misdemeanor or felony convictions under various titles of the Texas Penal Code may affect eligibility for state respiratory care practitioner license status following graduation and future employment in healthcare.

## Bachelor of Science in Respiratory Care (B.S.R.C.)

- Major in Respiratory Care (<http://mycatalog.txstate.edu/undergraduate/health-professions/respiratory-care/bsrc>)
- Major in Respiratory Care (RRT-to-BSRC Online Completion Program) (<http://mycatalog.txstate.edu/undergraduate/health-professions/respiratory-care/rrt-to-bsrc>)

## Courses in Respiratory Care (RC)

### RC 2213. Introduction to Respiratory Care.

This course offers an in-depth overview of the respiratory care profession to acquaint the student with the responsibilities of the respiratory therapist as part of healthcare team. Progression of the profession, career opportunities, past and future impact of profession on patient recovery and health maintenance, and medical gas therapy will be covered.

**2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.**  
**Grade Mode:** Standard Letter

### RC 3112. Pharmacology.

A comprehensive study of pharmacology principles. Receptor theory, clinical applications of medications, and historical analysis of first-generation medications will be covered. Current medication trends and recommendations are also examined.

**1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.**  
**Grade Mode:** Standard Letter

### RC 3125. Pulmonary Function Testing.

This course examines the most common pulmonary function tests, their techniques, and the pathophysiology that may be evaluated by each test. Pulmonary function equipment, calibration, and the American Thoracic Society guidelines will be discussed. Laboratory practice of performing the tests will be provided to develop skills for testing patients.

**1 Credit Hour. 0 Lecture Contact Hours. 4 Lab Contact Hours.**  
**Grade Mode:** Standard Letter

**RC 3313. RC Clinical Practice I.**

This course provides an introduction to respiratory care clinical skills, including vital signs, chest assessment, infection control, aerosolized medication delivery, oxygen therapy, hyperinflation therapy, and airway clearance. This course prepares the student for direct patient care to be performed in more advanced courses. Direct patient care is performed under close supervision.

**3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3314. Respiratory Care Instrumentation.**

Through lectures and lab exercises, students are acquainted with concepts of design, function, and operation of basic respiratory care equipment. Oxygen cylinders, regulators, flowmeters, oxygen analyzers, oximeters, oxygen adjuncts, humidifiers, nebulizers, airways, and pressure cycled ventilators will be covered. The course also covers respiratory pharmacology, decontamination of equipment, and arrhythmia recognition.

**3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3315. Cardiopulmonary - Renal Anatomy & Physiology.**

This course provides an in-depth human gross anatomy study of the cardiac, respiratory, and renal systems. Clinical application of pulmonary anatomy and physiology will also be explored.

**3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3316. Fundamentals of Respiratory Care.**

This course provides a study of theories and modalities utilized in delivering, monitoring, and evaluating basic respiratory therapeutics to patients with compromised respiratory function in various healthcare settings. Aspects of artificial ventilation, arterial blood gas analysis, lung volume diagnostics, and hyperinflation intervention will be covered in patient scenarios.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3321. Cardiopulmonary Pathology.**

As an introduction to the assessment, treatment, and pathophysiology of respiratory diseases, this course focuses on the signs, symptoms, etiology, pathophysiology, diagnosis and treatment of selected diseases. Utilizing clinical simulation software to develop critical thinking regarding assessment, diagnostic data gathering. (WI).

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Writing Intensive

**Grade Mode:** Standard Letter

**RC 3322. Critical Care Concepts.**

This course provides students with an in-depth study of selected respiratory care techniques with an emphasis on the care of critically ill patients. Critical skills and knowledge of mechanical ventilation, bedside diagnostic techniques, patient monitoring, and rehabilitation are explored in the critical care setting.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3323. RC Clinical Practice II.**

Students perform clinical procedures and interact with patients and professional personnel in a healthcare institution under the supervision of a respiratory therapist. Students gain direct patient care experience as presented in medical/surgical and pediatric clinical situations. Preparatory instruction is provided for mechanical ventilation and other critical care procedures.

**3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3324. Critical Care Instrumentation.**

A comprehensive study of advanced equipment and technology utilized in the critical care, homecare, pulmonary rehabilitation and blood gas lab settings. Lectures and class activities will detail hardware for hemodynamic monitoring, supplemental oxygen administration, noninvasive monitoring, blood gas measurement, quality control and assurance and mechanical ventilator concepts.

**3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3332. Hemodynamics.**

This course is an advanced study of cardiovascular hemodynamic measurements. Normal cardiovascular physiology and measures are examined, as well as variations caused by disease. Current clinical trends and practices in hemodynamic procedures are also explored.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3333. RC Clinical Practice III.**

A supervised clinical education experience in which the student administers advanced respiratory therapeutics to patients in the adult critical care setting. Diagnostic and monitoring procedures, including arterial blood gases, bedside physiologic monitoring, airway care, advanced pulmonary function testing, ventilator management will be performed according to physician orders.

**3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3334. Neonatal Respiratory Care.**

An in-depth study of neonatal utero development, fetal lung development, fetal circulation, and cardiovascular changes at birth. Neonatal respiratory emergencies, neonatal respiratory diseases and management, congenital defects, and respiratory care procedures specific to the neonate will be discussed. A specific emphasis on neonatal mechanical ventilation will be included.

**3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 3335. RC Clinical Practice IV.**

This course provides an advanced clinical education experience in respiratory therapeutics on patients in the adult critical care setting. Appropriate clinical expectations include experience in arterial blood gas procurement and measurement, bedside physiologic monitoring, airway care, and monitoring of mechanical ventilation in the intensive care unit.

**3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4211. Respiratory Care Research.**

This course provides an introduction to applied experimental design, research ethics, and data analysis focusing on the respiratory care profession. Students will participate in each step the research process from developing a personal research hypothesis and research design through IRB submission. Prerequisite: HP 3302 or equivalent.

**2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing

**Grade Mode:** Standard Letter

**RC 4216. Disease Management.**

The course offers an in-depth description of common therapeutic modalities and treatment protocols used to offset the anatomic alterations and pathophysiologic mechanisms activated by selected disorders. Students will develop an understanding of how therapies work to offset the anatomic alterations of lungs caused by disease.

Prerequisite: Departmental Approval required.

**2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4221. Leadership and Management for Respiratory Care Professionals.**

This course is designed to comprehensively examine the dynamic evolution of respiratory care as a profession. The role of the respiratory care professional in the areas of leadership, management, and professional ethics will be explored with regards to the profession's impact on legislation, regulation, and politics. (WI).

**2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Writing Intensive

**Grade Mode:** Standard Letter

**RC 4223. ICU Internship.**

Through affiliations with agencies, hospitals and selected treatment centers, the student interns in the intensive care setting by providing patient care and administering critical care therapeutics. Analysis and clinical application of advanced ventilator care of patients is emphasized along with patient care diagnostics and management in the ICU.

**2 Credit Hours. 0 Lecture Contact Hours. 8 Lab Contact Hours.**

**Grade Mode:** Credit/No Credit

**RC 4224. Research Seminar.**

A study of the research process from a review of research design to methodology implementation including data collection, statistical analysis, and presentation of a research proposal on a topic in the respiratory care discipline. The course provides direct research experience culminating in a research paper and presentation.

Prerequisite: RC 4211 with a grade of "D" or better.

**2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing

**Grade Mode:** Standard Letter

**RC 4225. Specialization Internship.**

This course provides the student with an internship opportunity to gain clinical experience in sub-specialty areas including pediatrics, adult intensive care, neonatal intensive care, pulmonary function testing, home care/durable medical equipment, subacute care, pulmonary rehabilitation, polysomnography, education, and research. Specific specialty offerings will be based on clinical availability.

**2 Credit Hours. 0 Lecture Contact Hours. 8 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing

**Grade Mode:** Credit/No Credit

**RC 4309. Pulmonary Diagnostics.**

The course examines various pulmonary diagnostic techniques and the pathophysiology associated with each diagnostic measurement in disease management and clinical research. The course will provide an in-depth presentation of clinical indications for various diagnostic analyses including the ethical responsibilities associated with clinical research.

Prerequisite: Departmental Approval Required.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4311. Interdisciplinary Healthcare.**

This course introduces the respiratory care student to the role that respiratory therapists play within the interdisciplinary healthcare team. The course will allow students to gain experience in developing and applying strategies to improve patient outcomes through the inclusion of the respiratory therapist with various appropriate healthcare disciplines.

Prerequisite: Departmental Approval required.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Writing Intensive

**Grade Mode:** Standard Letter

**RC 4312. Critical Care Clinical Simulation.**

Students will analyze concept review in preparation for national board examinations and evidence-based care. Classroom and laboratory instruction will demonstrate cumulative review of the Therapist Multiple Choice and the Clinical Simulation Examination national board exams. Clinical simulation case studies will be assessed reflecting real-life patient scenarios.

**3 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4314. Advanced Ventilator Concepts.**

This course provides an in-depth study of specific adult mechanical ventilators addressing traditional and proposed ventilator classification, various methods of operation, parameter interrelationships and ventilator patient monitoring. Lectures and class activities will focus on ventilator analysis of several contemporary volume-, time-, pressure- and flow-cycled ventilators with advanced graphics interpretation required.

**3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4316. RC Clinical Practice IV.**

This course provides an advanced intensive care clinical education requiring students to monitor and administer critical care therapeutics on assigned patients in the adult and neonatal critical care setting. Cardiopulmonary diagnostic experience will be gained through arterial blood gas and co-oximetry assessment with ventilator graphic analysis.

**3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4317. Pulmonary Rehabilitation.**

This course is designed to introduce students to the medical, ethical, and insurance reimbursement issues of pulmonary rehabilitation, homecare, and sleep diagnostic facilities. The role of therapists in case management, treatment requirements, and discharge planning along with the impact of legislation, regulations, and politics will be explored.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4318. Independent Study in Respiratory Care.**

This course provides the student an in-depth study on a topic or healthcare problem impacting respiratory care. The course may be repeated for credit with a different emphasis.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Exclude from 3-peat Processing

**Grade Mode:** Standard Letter

**RC 4322. RC Practitioner Seminar.**

Students will research and present selected case studies by students to physicians, therapists, and colleagues. Presentations will emphasize total patient management with etiology, symptoms, pathophysiology, diagnosis, and treatment of specific diseases including asthma, pulmonary embolism, CHF, COPD, ARDS, neurologic diseases, inhalational injury, pneumonia, sleep disordered breathing, AIDS, and drug overdose. (WI).

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Writing Intensive

**Grade Mode:** Standard Letter

**RC 4324. Sleep Medicine and Polysomnography.**

This course introduces the respiratory care student to sleep medicine and polysomnography. The course will present topics on sleep stages, sleep architecture, and sleep disorders. Basic and advanced treatment options of selected sleep disorders will be discussed. Prerequisite: Departmental Approval required.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4333. Neonatal Critical Care.**

This course will provide the Respiratory Care student with advanced knowledge on the management of the neonatal patient in the critical care environment. The course will expose the student to advanced therapeutics and mechanical ventilation strategies. Course content will prepare the student for the role of neonatal specialist. Prerequisite: Departmental Approval required.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Grade Mode:** Standard Letter

**RC 4334. Adult Critical Care.**

This course provides professional enrichment for practitioners with a conceptual foundation for adult critical care medicine. The course will provide an in-depth presentation of advanced respiratory therapy therapeutics and procedures caring for adults in the intensive care unit. Prerequisite: Departmental Approval required.

**3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.**

**Course Attribute(s):** Writing Intensive

**Grade Mode:** Standard Letter