

## Department of Respiratory Care

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### Degree Program Offered

- BSRC, major in Respiratory Care

The degree program prepares students to treat patients with deficiencies or abnormalities in respiration. Therapists work for hospitals, clinics, and home health agencies.

Respiratory care majors take classes on campus and gain clinical experience in area hospitals. RC courses must be taken in sequence. Students taking courses prior to applying for admission to the RC program should see an RC adviser for counseling. Students who have completed an associate degree program elsewhere may be eligible for transfer to Texas State's baccalaureate degree program. For information on this option, see the RC department chair. Texas State's respiratory care program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and qualifies graduates to take the appropriate exams offered by the National Board for Respiratory Care when all requirements have been met.

The Department of Respiratory Care also offers a course of study in polysomnography (sleep studies) that is fully accredited by CAAHEP and qualifies students completing the courses to take the national board exam through the Board for Registered Polysomnographic Technologists immediately upon completion. The polysomnography course of studies is comprised of six courses (18 credit hours) with three courses offered each fall and spring.

Admission to the polysomnography course of studies requires current state or national credentialing in a health profession involving patient care or interaction. Admission to the course of studies begins each fall.

### Admission Process

Application must be made to the program in respiratory care in addition to regular university admission procedures. All students entering this program must be accepted by both the university and the respiratory care program. All applicants will be notified of their admittance status. Enrollment in the respiratory care program is limited by student/faculty ratio in the clinical phases of the program. All respiratory care courses must be taken in sequence and completed with a grade of "C" or higher.

### Liability Insurance

1. Students who participate in the clinical portion of the respiratory care program are required to purchase liability insurance, or demonstrate proof that they are insured.
2. Students may obtain information on liability insurance from the departmental office.

### 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, and must complete certain immunizations before the student can be placed in a clinical or internship assignment. Information on these requirements and forms to be submitted may be obtained through the departmental office.

**Bachelor of Science in Respiratory Care  
Major in Respiratory Care**

Minimum required: 139 semester hours

General Requirements:

1. Any student who did not complete at least two years of the same foreign language in high school is required to take 6-8 hours of the same foreign language.
2. Any student who did not complete one year of general computer science (literacy) course in high school is required to take a placement test, CLEP, or college course work.
3. See University College section of the catalog for course options that satisfy literature components.

<b>Freshman Year – 1st Semester</b>	<b>Hours</b>
ENG 1310.....	3
BIO 1320 or 1421.....	3-4
US 1100.....	1
HIM 2360.....	3
RC 1313.....	3
<b>Total</b>	<b>13-14</b>

<b>Freshman Year – Summer</b>	<b>Hours</b>
RC 1316.....	3
RC 1445.....	4
<b>Total</b>	<b>7</b>

<b>Sophomore Year – 1<sup>st</sup> Semester</b>	<b>Hours</b>
HIST 1310.....	3
MATH 1315.....	3
RC 1321, 2355.....	6
RC 3331.....	3
<b>Total</b>	<b>15</b>

<b>Sophomore Year – Summer</b>	<b>Hours</b>
PHYS 1310, 1110.....	4
RC 2311.....	4
RC 4220.....	2
<b>Total</b>	<b>9</b>

<b>Junior Year – 1<sup>st</sup> Semester</b>	<b>Hours</b>
BIO 2400 or 2440.....	4
POSI 2310.....	3
RC 2375, 3311, 4315.....	9
<b>Total</b>	<b>16</b>

<b>Junior Year – Summer</b>	<b>Hours</b>
RC 3375.....	3
<b>Total</b>	<b>3</b>

<b>Senior Year – 1<sup>st</sup> Semester</b>	<b>Hours</b>
ART, DAN, MU, or TH 2313.....	3
Statistics.....	3
ENG Literature.....	3
RC 3310, 4330.....	6
<b>Total</b>	<b>15</b>

<b>Freshman Year – 2nd Semester</b>	<b>Hours</b>
ENG 1320.....	3
BIO 2430.....	4
PSY 1300.....	3
RC 1135, 1314, 1315.....	7
<b>Total</b>	<b>17</b>

<b>Sophomore Year – 2<sup>nd</sup> Semester</b>	<b>Hours</b>
HIST 1320.....	3
PFW course.....	1
PHIL 1305 or 1320.....	3
RC 2352, 2365.....	6
RC 3330.....	3
<b>Total</b>	<b>16</b>

<b>Junior Year – 2nd Semester</b>	<b>Hours</b>
POSI 2320.....	3
CHEM 1141, 1341.....	4
RC 3352, 3365, 4341.....	9
<b>Total</b>	<b>16</b>

<b>Senior Year – 2nd Semester</b>	<b>Hours</b>
COMM 1310.....	3
PFW course.....	1
RC 4246, 4320, 4350.....	8
<b>Total</b>	<b>12</b>

## **Courses in Respiratory Care (RC)**

**1135 Respiratory Care Clinical Laboratory I.** (0-16) Introduction to clinical skills, including vital signs, infection control procedures, and basic patient care techniques. This course prepares the student for direct patient care to be performed in more advanced courses.

**1313 Introduction to Respiratory Care.** (3-0) Introductory course to field of respiratory care. Designed to acquaint student with responsibilities of technician as a member of health team. Airway management, gas therapy, and humidity therapy will be covered.

**1314 Respiratory Care Instrumentation I.** (3-0) Designed to teach the design, function, and operation of basic respiratory care equipment. Regulators, flow meters, humidifiers, and nebulizers will be covered.

**1315 Basic Technology in Respiratory Care.** (3-0) Designed to teach students basic principles of respiratory care techniques and basic operations of equipment. Artificial ventilation, cardiopulmonary resuscitation and chest physiotherapy will be covered.

**1316 Respiratory Care Instrumentation II.** (3-0) Acquaints students with concepts of design, function, and operation of more advanced respiratory care equipment. Pressure cycled ventilators, spirometers, airways, cardiopulmonary resuscitation equipment will be covered.

**1321 Introduction to Pharmacology.** (3-0) Designed to familiarize students with general principles of drug action, methods of administration, elements of dispensation and with adverse reactions to drugs. Specifically designed for respiratory care practitioners.

**1445 Respiratory Care Clinical Lab II.** (0-32) Direct patient care is performed under close supervision in a non-critical setting. Routine procedures are performed, including delivery of aerosolized medications, oxygen therapy, incentive spirometry, postural drainage, and chest percussion.

**2311 Cardiopulmonary Disease I.** (3-0) Introduction to the assessment and treatment of the patient with respiratory disease. The course focuses on the signs, symptoms, causes, and treatment of chronic obstructive pulmonary disease, diseases of the nervous system, respiratory muscles and occupational lung diseases. In addition, the assessment and treatment of patients with cardiopulmonary disease to include restrictive lung disease, cardiac disease, infectious disease, and lung cancer.

**2352 Cardiopulmonary-Renal Anatomy and Physiology.** (3-0) Detailed study of the structure and function of the respiratory, cardiovascular, and renal systems. Prerequisite: BIO 2430 or instructor approval.

**2355 Respiratory Care Practice I.** (0-16) Student gains skill in clinical procedures, interactions with patients and professional personnel as he practices, under supervision, respiratory care therapeutic modalities in a healthcare setting. Becomes familiar with various RT aspects of patient care as presented in medical/surgical and pediatric clinical situations.

**2365 Respiratory Care Practice II.** (0-16) Students will perform respiratory therapy procedures in a healthcare institution under the supervision of a Respiratory Therapist. Preparatory instruction is provided for mechanical ventilation and other primary critical care procedures.

**2375 Respiratory Care Practice III.** (0-16) A supervised clinical education experience in which the student organizes and administers advanced respiratory therapeutics on assigned patients in adult critical care. Diagnostic procedures, including arterial blood gas procurement and measurement, bedside physiologic monitoring, airway care, basic pulmonary function testing, as well as monitoring and maintenance of ventilator parameters are performed.

**3310 Cardiopulmonary/Renal Gross Anatomy.** (2-3) Designed to acquaint the student with the anatomy and physiology of the cardiovascular, pulmonary, and renal systems. Students will participate in the cadaver dissection and radiographic anatomy by matching cadaver cardiopulmonary structures with radiographic findings. Prerequisites: BIO 2430 and RC 2352.

(WI) **3311 Applied Pathology.** (3-0) Lecture series and case presentation related to pathophysiology, etiology, symptoms, diagnosis and treatment of selected pulmonary disease entities, cardiac diseases, neurologic disease processes and occupationally acquired disease entities as they relate to respiratory function. Clinical Simulation software utilized for clinical patient assessment, diagnostic data gathering and treatment.

**3330 Advanced Respiratory Care Technology.** (3-0) In-depth study of respiratory physiology comparing the cardiopulmonary system of the adult, infant, and fetus. Emphasis is placed on how to evaluate, treat and monitor patients with respiratory insufficiency or failure.

**3331 Advanced Respiratory Care Instrumentation.** (3-0) A comprehensive focus on advanced equipment and rehabilitation 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, quality assurance and various other support advances in healthcare.

**3352 Advanced Ventilator Concepts.** (3-0) In-depth study of specific ventilators used in adult, pediatric and neonatal ventilation to include ventilator classification, method 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.

**3365 Respiratory Care Practice IV.** (0-16) Advanced clinical education in the intensive care setting in which the student monitors and administers critical care therapeutics on assigned patients in the adult and neonatal intensive care setting. Physician input and pulmonary rounds assist students in theory and application of care for the critically ill patient.

**3375 ICU Internship.** (0-16) Through affiliations with agencies, hospitals and selected treatment centers the student interns in the intensive care setting by monitoring 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.

**4211 Polysomnography Instrumentation I.** (0-2) Designed to teach the function, operation, and design of electroneurodiagnostic equipment. Monitoring devices, electrode application, and patient connection will be covered in detail. Prerequisite: Departmental approval.

**4214 Polysomnography Instrumentation II.** (0-2) Advanced study of waveform characteristics and montage development, filters, and PSG electronics. Signal pathways, reference electrodes, impedance checking, and filter settings in calibration waves will be covered. Prerequisite: Departmental approval.

**4220 Cardiovascular and Pulmonary Diagnostics.** (2-0) Examination of non-invasive monitoring technology in respiratory care, hemodynamic monitoring, acid-base interpretation of blood gas and application, and pulmonary function test interpretation.

**4246 Respiratory Care Internship.** (0-16) Provides the student with opportunities to gain clinical experience in specialty areas to include pediatrics, adult critical care, neonatal intensive care, pulmonary function diagnostics, home care, subacute care, pulmonary rehabilitation or polysomnography. Specific specialty offerings will be based on clinical availability. Repeatable for credit with different emphasis.

**4310 Fundamentals of Polysomnography.** (3-0) Introduction to the physiology of sleep, including sleep neurology, sleep architecture, and the classification of sleep disorders. Review of basic cardiac physiology and ECG arrhythmia recognition. Sleep pathologies will be discussed according to etiology, pathophysiology, symptoms, diagnosis, treatment, and prognosis. Prerequisite: Departmental approval.

**4313 Polysomnographic Therapeutic Intervention.** (3-0) In-depth study of the treatments available for sleep apnea, including CPAP, BiPAP, oxygen therapy, patient adjunctive fitting, surgical intervention, and the role of the sleep tech in titration. Special attention will be given to titration algorithms, nocturnal seizure disorder studies, REM behavior disorder studies, MSLT's and MWT's. Prerequisite: Departmental approval.

**4315 Neonatal Respiratory Care.** (3-0) In-depth study of neonatal intensive care, pediatric/neonatal respiratory emergencies, chronic pediatric respiratory diseases, fetal lung development, fetal circulation, changes at birth, neonatal respiratory disease and its management, congenital defects and other related aspects.

(WD) **4320 Contemporary Issues in Cardiopulmonary Care.** (3-0) This course is designed to prepare senior-level students for the dynamic evolution of respiratory care as a profession. It will build on previous didactic courses and clinical experiences. It will examine opportunities for respiratory therapists in continuing care and home care and also cover the impact and role of legislation, regulations, professional organizations and politics in respiratory care. Ethics of patient care and professional behavior will be explored. Repeatable for credit with different emphasis.

**4330 Pulmonary Rehabilitation.** (3-0) An introduction to medical, ethical, and reimbursement issues of respiratory care pulmonary rehab and home care. The role of the therapist in cost containment, treatment requirements, and discharge planning will be addressed. Frequently applied respiratory and durable medical equipment will be discussed in detail.

(WD) **4341 Respiratory Care Seminar.** (3-0) Individual and group presentation of selected case studies by the student to physicians, therapists and other students. Emphasis placed on total patient management with etiology, symptoms, pathophysiology, diagnosis, and treatment of specific diseases such as asthma, pulmonary edema, CHF, CF, COPD, ARDS, neurologic diseases, pulmonary fibrosis, pneumonia, bronchiectasis, AIDS and drug overdose.

**4350 Respiratory Care Research.** (3-0) An introduction to research methods, experimental inquiry, and naturalistic observations. This course is designed to acquaint the student with the necessary skills to conduct research in respiratory care. The primary purpose is to provide a foundation from which the student will critique, develop, and apply multiple research strategies. Repeatable with different emphasis. Prerequisite: HP 3302 or equivalent.

**4412 Clinical Polysomnography-Sleep Staging I.** (0-10) Direct patient diagnostic monitoring is performed under close supervision in a sleep lab. Differential amplifiers, amplifier calibration, artifact correction, and the professional role of the sleep tech will be demonstrated. Prerequisite: Departmental approval.

**4415 Clinical Polysomnography-Sleep Staging II.** (0-10) Advanced clinical education in sleep staging rules, light, delta, and REM sleep scoring and analysis. EEG, EMG, ECG, and respiratory events will be discussed in-depth and are components of the polysomnogram report. Prerequisite: Departmental approval.