

- 4190 Professional Issues in Radiation Therapy. (1-0) This capstone course provides a comprehensive review of the program curriculum and clinical practice in the field. Current radiation therapy treatment management techniques and issues are presented for analysis.
- 4290 Radiation Therapy Seminar. (2-0) This writing intensive course provides instructions in research strategies, critical review, and analysis of peer-review publications, manuscript style, and publication guidelines according to the American Society of Radiologic Technologists (ASRT) professional journal. Emphasis is placed on critical thinking and building a foundation of research skills. (WI)
- 4310 Physics of Radiation Therapy II. (3-0) Students will continue to learn the principles of cell response to radiation. Topics covered will include properties of x-ray and gamma radiation, radiation units, x-ray production, photon interactions, beam characteristics, radioactivity, treatment units, and particle irradiation. Prerequisite: RTT 3310.
- 4320 Directed Clinical Learning III. (1-24) Students will improve their skills in clinical procedures. Progressive interaction with patients and professional personnel are monitored as students practice radiation therapy in a supervised setting. Additional areas include problem solving, identifying machine components and basic side effect management. Students will demonstrate competence in beginning, intermediate, and advanced procedures.
- 4321 Directed Clinical Learning IV. (1-24) The course provides students the opportunity to continue to develop confidence and increased skill in simulation and treatment delivery. Students will demonstrate competence in beginning, intermediate, and advanced procedures in both areas. Students will participate in advanced and specialized treatment procedures.
- 4322 Directed Clinical Learning V. (1-24) This course is the final in a series of five directed clinical courses. The student will complete the clinical training by practicing all the skills learned in classroom and clinical instruction. The student will continue demonstrating proficiency while completing the Skills Competency Checklist.
- 4330 Quality Assurance. (3-0) Students will study quality assurance tests related to patient charts, treatment accessories, patient communication devices, machine reading and safety devices. Emphasis on quality control procedures to include Continuous Quality Improvement (CQI), Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and responsibilities of each team member in relation to quality assurance duties.
- 4331 Operational Issues in Radiation Therapy. (3-0) Course content is designed to focus on various radiation therapy operational issues. Accreditation, CQI development and assessment techniques will be presented. Human resource issues and regulations impacting the radiation therapist will be examined. Topics include the role of network information systems within the radiation oncology department.
- 4360 Dosimetry I. (3-0) This course will cover the basic concepts in treatment planning and clinical dosimetry. Students will learn to identify treatment preparation processes and needs for beam modifying devices. Students will also be taught isodose charts for several treatment arrangements and be able to calculate a variety of external beam treatment formulas.
- 4361 Dosimetry II. (3-2) Students will learn additional concepts in treatment planning and clinical dosimetry addressed in Dosimetry I. Computerized treatment planning applications will enhance the understanding of medical dosimetry.
- 4370 Clinical Radiation Oncology I. (3-0) The first of a two-part course, this course advances the student's knowledge of neoplastic disease management. Instruction will focus on the regional anatomy and physiology, epidemiology and etiology, detection and diagnosis, diagnostic procedures, histopathology, patterns of spread principles of treatment, staging, and prognosis. (WI)
- 4371 Clinical Radiation Oncology II. (3-0) The second of a two-part course, this course is a continuation of disease specific instruction. Instruction will focus on the regional anatomy and physiology, epidemiology and etiology, detection and diagnosis, diagnostic procedures, histopathology, patterns of spread, principles of treatment, staging, and prognosis. Prerequisite: RTT 4370. (WI)

Department of Respiratory Care

Health Professions Building 351
T: 512.245.8243 F: 512.245.7978
www.health.txstate.edu/rc

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 for Respiratory Care (COARC) 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 COARC and qualifies students completing the courses to take the national board exams 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.

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.

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.

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.							
Freshman Year - 1st Semester		Freshman Year - 2nd Semester		Freshman Year - Summer		Sophomore Year - 1st Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
ENG 1310	3	ENG 1320	3	RC 1316	3	HIST 1310	3
BIO 1320 or 1421	3-4	BIO 2430	4	RC 1445	4	MATH 1315	3
US 1100	1	PSY 1300	3			RC 1321, 2355	6
HIM 2360	3	RC 1135, 1314, 1315	7			RC 3331	3
RC 1313	3						
Total	13-14	Total	17	Total	7	Total	15
Sophomore Year - 2nd Semester		Sophomore Year - Summer		Junior Year - 1st Semester		Junior Year - 2nd Semester	
Course	Hr	Course	Hr	Course	Hr	Course	Hr
HIST 1320	3	PHYS 1310, 1110	4	BIO 2400 or 2440	4	POSI 2320	3
PFW course	1	RC 2311	3	POSI 2310	3	CHEM 1141, 1341	4
PHIL 1305 or 1320	3	RC 4220	2	RC 2375, 3311, 4315	9	RC 3352, 3365, 4341	9
RC 2352, 2365	6						
RC 3330	3						
Total	16	Total	9	Total	16	Total	16
Junior Year - Summer		Senior Year - 1st Semester		Senior Year - 2nd Semester			
Course	Hr	Course	Hr	Course	Hr		
RC 3375	3	ART, DAN, MU, or TH 2313	3	COMM 1310	3		
		Statistics	3	PFW course	1		
		ENG Literature	3	RC 4246, 4320, 4350	8		
		RC 3310, 4330	6				
Total	3	Total	15	Total	12		

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.
- 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. (WI)
- 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.
- 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. (WI)
- 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.
- 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. (WI)
- 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.