

DEPARTMENT OF RESPIRATORY CARE

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Respiratory Care Profession

Respiratory therapists work as part of the health care team in hospitals, cardiopulmonary diagnostic laboratories, rehabilitation centers, and home care agencies. They work with physicians and other health professionals in health care planning, evaluation, and treatment of patients with cardiac and pulmonary disorders.

As clinicians they perform therapeutic and life-support procedures, including the administration of oxygen and aerosolized medications, breathing treatments, chest physical therapy, and mechanical ventilatory support. In addition they perform diagnostic tests that assess cardiac and lung function and operate physiologic monitoring equipment and life-support systems in the critical care setting.

Respiratory Therapist Graduates

Respiratory therapy graduates function in a wide variety of settings. As clinicians they work in adult intensive care units, pediatric and neonatal intensive care units, emergency and trauma units, operating and recovery rooms, rehabilitation programs, home health agencies, and a variety of cardiopulmonary diagnostic laboratories. Some graduates pursue advanced degrees in management, education, public health, or the biomedical sciences. Graduate degrees lead to teaching or research positions in educational institutions. Senior respiratory care practitioners may be responsible for the management and operation of respiratory care departments.

Professional Curriculum

The Program in Respiratory Care at the SAHS offers three tracks: 1) a Foundation Program for applicants entering the field, 2) a Career Ladder Program for Registered Respiratory Therapists, and 3) a master's degree option that allows qualified applicants to pursue a combined degree leading to a bachelor's degree in Respiratory Care and a master's degree in Physical Therapy (BSRC/MPT) or a master's degree in Physician Assistant Studies (BSRC/MPAS).

The Foundation Program

This program is a "2 + 2" curriculum format for students entering the profession. Prospective students must first complete 61 semester credit hours of science and general prerequisites at another accredited institution. They are then eligible to apply for the Foundation Program. The professional portion of the curriculum consists of six consecutive semesters. The program is intended to provide students a foundation in anatomy, physiology, pharmacology, and clinical medicine as they pertain to respiratory care; to instruct them in the process of planning and evaluating patient care in conjunction with other members of the health care team; to develop decision-making and problem-solving skills; and to promote competency in the provision of respiratory care procedures. Entering classes begin in the fall semester of each year.

After successful completion of the first four semesters of the Foundation Curriculum, students in the spring semester of their senior year are recognized as having completed the equivalent of an associate of applied science degree in respiratory care, and are required to take and pass the National Board for Respiratory Care (NBRC) Entry Level Exam. After completion of the remaining senior course work and all curriculum requirements, with a minimum GPA of 2.0, the degree of Bachelor of Science in Respiratory Care is conferred. Graduates are then eligible to sit for the advanced credentialing exams (Registry Level written registry exam and clinical simulations exam) administered by the NBRC. Graduation from an accredited educational program and successful completion of the entry-level exam administered by the NBRC fulfills the eligibility requirements of the Texas Department of Health for state certification as a respiratory care practitioner.

The Career Ladder Program

This program is for graduates of other types of respiratory care programs who have passed the NBRC Registry examinations. Entering Career Ladder students are credited with 54 semester credit hours of course work for their Registered Respiratory Therapist (RRT) credential. This permits them to bypass the respiratory care foundation courses. In addition to

the RRT credential, Career Ladder students must also complete the 61 semester credit hours of general and science prerequisite courses that are required of the Foundation Program students. Career Ladder students are eligible to apply for entrance during any semester.

The Alternate Program

This program is designed for students who need additional time to complete the curriculum. In this program the normal course sequence for the Foundation Program is extended over a three-year period. Students who have been admitted to the Alternate Program may be required to select additional semester hours of credit from electives chosen with the approval of the advisor and department chair. These electives, along with the normal courses listed in the Foundation Program are distributed over a three-year period.

Master of Physical Therapy and Master of Physician Assistant Studies Programs

The BSRC/MPAS and BSRC/MPT Tracks allow qualified applicants to pursue a master's degree program that complements and expands upon the baccalaureate degree in respiratory care. The B.S. in Respiratory Care (BSRC) and completion of the NRBC Registry Credential must be completed before entering the Master of Physical Therapy or Master of Physician Assistant Studies degree programs. Some students may require additional time to complete the master's prerequisite requirements and may apply to the master's program after completion of the Bachelors of Respiratory Care degree.

Program Accreditation Goal

The goal of the Respiratory Care Program is to prepare students as competent advanced respiratory care practitioners. This goal includes three educational objectives:

- 1) Cognitive Domain—to prepare students with the ability to comprehend, apply, and evaluate clinical information relevant to their role as advanced-level respiratory therapists;
- 2) Psychomotor Domain—to prepare students with the ability to demonstrate technical proficiency in all the skills necessary to fulfill their role as advanced level respiratory therapists; and
- 3) Affective domain—to prepare students with the ability to demonstrate professional behaviors consistent with employer expectations as advanced-level respiratory therapists.

Additional Department/University goals include:

- 1) developing and disseminating new knowledge concerning the field of respiratory care, and
- 2) assisting the community in matters relating to the field of respiratory care by contributing expertise and services as needed.

Academic Performance Standards

Respiratory Care majors must complete all courses with a "RESC" prefix with a minimum grade of "C". If a grade lower than "C" is recorded, the student will be placed on scholastic probation and must repeat the course regardless of the overall GPA. Courses may not be repeated more than twice. In general the professional courses are offered only once a year. Any other scheduling requests must be approved by the department faculty and the Grading and Promotion Committee. Please see the "Academic Progress" section of this *Bulletin* for additional information regarding academic performance standards, scholastic probation, and dismissal policies.

Upon completion of all curriculum requirements with a minimum GPA of 2.0, the degree of Bachelor of Sciences in Respiratory Care is conferred. Graduates of program are eligible in sequence to sit for the Entry Level Certified Respiratory Therapists Exam (CRT) and the Registered Respiratory Therapists Exam (RRT) administered by the National Board for Respiratory Care.

All states regulate Respiratory Care practice. Conviction of a felony offense may result in ineligibility to receive licensure in Texas. Each case is considered on an individual basis by the Texas Department of State Health Services (Respiratory Care Practitioners Certification Program). For further information contact:

Respiratory Care Practitioners Certification Program
 Texas Department of State Health Services
 1100 West 49th Street
 Austin, Texas 78756-3183, USA

Professional Course of Study

Courses taught in the Department of Humanities and Basic Sciences (HUBS) that are required portions of the Respiratory Care professional curriculum are described in their respective sections of this publication.

Students from other health-related majors may enroll in respiratory care courses with the consent of the instructor.

**Department of Respiratory Care
 Two Year Program
 2004-2005**

JUNIOR YEAR

Fall Semester		CREDITS
RESC 3412	Pulmonary Physiology	4
RESC 3513	Pathophysiology and Patient Assessment.....	5
RESC 3414	Respiratory Pharmacology	4
RESC 3315	Respiratory Therapeutics.....	3
RESC 3116	Respiratory Therapeutics Lab.....	1
TOTAL HOURS		17
 Spring Semester		
RESC 3523	Critical Application of Mechanical Ventilation	5
RESC 3124	Critical Care Instrumentation	1
RESC 3322	Neonatal & Pediatrics	3
*RESC 3621	Physiologic Monitoring.....	6
*RESC 3125	Physiologic Monitoring Lab.....	1
*PHAS 4090	Special Topics in PA Studies.....	2
TOTAL HOURS		18
 Summer Semester		
*RESC 3332	Pulmonary Functions	3
*RESC 3133	Pulmonary Functions Lab.....	1
RESC 3434	Intro to Clinical Practice	4
RESC 3235	Intro to Diagnostics & Specialty Clinics.....	2

*HUBS 4035	Computer Utilization for Health Care Management	3
*INDS 4001	Interdisciplinary Studies	1
	TOTAL HOURS	14

JUNIOR YEAR TOTAL 49 CREDITS

SENIOR YEAR

Fall Semester

RESC 4143	Program Entry-Level Comprehensive Exam.....	1
RESC 4444	Adult Critical Care Clinical I	4
RESC 4245	Pedi/Neo Critical Care Clinical I.....	2
RESC 4246	Specialty Rotation Clinical I	2
*RESC 4165	ACLS	1
*CORE 3124	Intro to Management Skills in Health Care	1
	TOTAL HOURS	11

Spring Semester

RESC 4153	Program Written Registry Comprehensive Exam	1
RESC 4554	Adult Critical Care Clinical II	5
RESC 4355	Pedi/Neo Critical Care Clinical II.....	3
RESC 4356	Specialty Rotations Clinic II	3
*CORE 3321	Legal & Ethical Issues in Health Care	3
	TOTAL HOURS	15

Summer Semester

*RESC 4361	Rehabilitation and Home Care.....	3
*RESC 4264	Professional Issues	2
RESC 4166	Clinical Simulations.....	1
*RESC 4367	Adult Critical Care Clinical III	3
RESC 4068	Clinical Internship & Specialty Rotation III	3-5
CORE 3225	Introduction to Research.....	2
INDS 4001	Interdisciplinary Studies.....	1
	TOTAL HOURS	15-17

SENIOR YEAR TOTAL 41 CREDITS
TOTAL PROGRAM CREDITS 90-92 CREDITS

* *Career Ladder Program Required Courses—Total Credit Hours = 30-32 CREDITS*

**Department of Respiratory Care
Two Year Program 2006-2008**

JUNIOR YEAR

Fall Semester

RESC 3412	Pulmonary Physiology.....	4
RESC 3413	Pathophysiology and Patient Assessment.....	4
RESC 3414	Respiratory Pharmacology	4
RESC 3315	Respiratory Therapeutics	3
RESC 3116	Respiratory Therapeutics Lab	1

TOTAL HOURS 16

Spring Semester

RESC 3523	Critical Application of Mechanical Ventilation	5
RESC 3124	Critical Care Instrumentation	1
RESC 3322	Neonatal & Pediatrics.....	3
*RESC 3621	Physiologic Monitoring	6
*RESC 3125	Physiologic Monitoring Lab	1
*PHAS 4090	Special Topics in PA Studies	2

TOTAL HOURS 18

Summer Semester

*RESC 3332	Pulmonary Functions	3
*RESC 3133	Pulmonary Functions Lab	1
RESC 3434	Intro to Clinical Practice	4
RESC 3235	Intro to Diagnostics & Specialty Clinics.....	2
*HUBS 4035	Computer Utilization for Health Care Management.....	3
*INDS 4001	Interdisciplinary Studies	1

TOTAL HOURS 14

JUNIOR YEAR TOTAL

48 CREDITS

SENIOR YEAR

Fall Semester

RESC 4143	Program Entry-Level Comprehensive Exam	1
RESC 4444	Adult Critical Care Clinical I.....	4
RESC 4245	Pedi/Neo Critical Care Clinical I	2
RESC 4246	Specialty Rotation Clinical I.....	2
*RESC 4165	ACLS.....	1
*CORE 3124	Intro to Management Skills in Health Care.....	1

TOTAL HOURS..... 11

Spring Semester

RESC 4153	Program Written Registry Comprehensive Exam.....	1
RESC 4554	Adult Critical Care Clinical II.....	5
RESC 4355	Pedi/Neo Critical Care Clinical II	3
RESC 4356	Specialty Rotations Clinic II.....	3
*CORE 3321	Legal & Ethical Issues in Health Care.....	3

TOTAL HOURS 15

Summer Semester

*RESC 4361	Rehabilitation and Home Care	3
*RESC 4264	Professional Issues	2
*RESC 4367	Adult Critical Care Clinical III.....	3
*RESC 4068	Clinical Internship & Specialty Rotations III.....	3-5
RESC 4166	Clinical Simulations	1
*CORE 3225	Introduction to Research	2
INDS 4001	Interdisciplinary Studies	1

TOTAL HOURS 15-18

SENIOR YEAR TOTAL

41-43 CREDITS

TOTAL PROGRAM CREDITS

89–91 CREDITS

****Career Ladder Program Required Courses—Total Credit Hours = 35–37 CREDITS***

L:RC/IDEAL/RC Course of Study2006

COURSE DESCRIPTIONS

RESC 3116 (Laboratory) Respiratory Therapeutics Lab **1 credit**

Laboratory course for respiratory therapeutics for pre-clinical practice. See RESC 3315 for detailed description. To complete the course, students are required to successfully pass all assigned laboratory competencies. Credit for this course will be based on quizzes, examination, and assignments. (45 lab hours per enrollment period)

RESC 3124 (Laboratory) Critical Care Instrumentation Lab **1 credit**

This laboratory course provides the student the opportunity to develop skills related to respiratory care procedures and equipment currently applied in adult, pediatric, and neonatal critical care settings. The student is evaluated on his or her performance of invasive procedures, such as arterial puncture and intubation, as well as assembly and operational verification of a variety of mechanical ventilators. To complete the course, students are required to successfully pass all assigned laboratory competencies. Credit is based on laboratory assignments, quizzes, and examinations. (60 lab hours per enrollment period) *Prerequisite: Successful completion of all fall semester junior courses.*

RESC 3125 (Laboratory) Physiologic Monitoring Lab **1 credit**

Laboratory course to apply skills from RESC 3621. Credit for this course will be based on laboratory performance. (45 lab hours per enrollment period)

RESC 3133 (Laboratory) Pulmonary Functions Lab **1 credit**

Laboratory and clinical sessions support lecture topics and provide the students opportunities to develop technical operations skills, practice quality control measures and perform actual testing regimes. See RESC 3332 for detailed description. Credit for the course is based on laboratory performance. (4 hours lab/week)

RESC 3235 Pulmonary Functions Clinic **2 credits**

This course complements the Pulmonary Functions didactic class by providing an opportunity for students to practice designated pulmonary function tests in a hospital-based pulmonary functions laboratory. Students will have the opportunity to: 1) perform spirometry tests following American Thoracic Society (ATS) performance and acceptability guidelines; 2) perform lung volume tests using nitrogen washout and body-plethysmography techniques; 3) perform diffusion capacity tests; 4) describe and demonstrate proper patient instruction techniques for each test; 5) develop basic interpretation skills through the submission of graphic reports and case studies; and 6) identify and perform procedures to ensure that testing equipment meet calibration and quality-assurance guidelines. (120 clinical hours per enrollment period) *Co-requisites: RESC 3332 Neonatal and Pediatrics and RESC Pulmonary Functions Lab..*

RESC 3315 Respiratory Therapeutics **3 credits**

This intermediate course provides the student with the opportunity to acquire knowledge and skills necessary to perform basic respiratory therapeutic procedures. Topics include oxygen therapy, humidity and aerosol therapy, breathing exercises, postural drainage and percussion, and hyperinflation therapy. Credit for this course will be based on didactic quizzes, examinations, and assignments. (45 lecture hours per enrollment period) *Prerequisite: Consent of the instructor.*

RESC 3322 Neonatal and Pediatrics **3 credits**

This advanced-level course provides the student the opportunity to acquire knowledge and skills relating to the diagnosis and management of neonatal and pediatric patients. Lecture topics include physiologic and anatomic development, diagnosis, and management of neonatal and pediatric disorders, mechanical ventilation, and specialized equipment. Credit for this course is based on written examinations and assignments. (45 lecture hours per enrollment period) *Prerequisite: Successful completion of all fall semester junior level courses.*

RESC 3332 Pulmonary Functions

3 credits

This intermediate course provides the student an opportunity to extend knowledge and skills in the utilization and application of design principles, operation, maintenance, and quality control of pulmonary function, blood gas, gas analysis, and metabolic monitoring equipment commonly found in pulmonary diagnostic laboratories. Credit for the course is based on didactic examinations. (3 hours lecture/week) *Prerequisites: Successful completion of RESC 3412 Pulmonary Physiology and RESC 3413 Pathophysiology and Patient Assessment.*

RESC 3412 Pulmonary Physiology

4 credits

An intermediate course providing the student an opportunity to obtain knowledge related to pulmonary physiology. Lectures will include presentations of the structure and function of the normal lung, lung mechanics, gas diffusion and transport, ventilation/perfusion relationships, blood-gas regulation, and ventilatory control. Demonstrations support lecture topics using a variety of laboratory and animal models. Credit for this course will be based on didactic quizzes, examinations, and laboratory reports. (60 lecture hours and 12 demonstration lab hours per enrollment period) *Prerequisite: Consent of the instructor.*

RESC 3414 Respiratory Pharmacology

4 credits

This intermediate course provides the student with the opportunity to develop knowledge related to the principles of respiratory pharmacology including: regulatory agencies, dosage calculations, and the physiology of the autonomic nervous system. Major topics presented include: sympathomimetics, parasympatholytics, xanthines, prostaglandins, mucokinetics, corticosteroids, cromolyn sodium, other bronchoactive agents, and neuromuscular blockers. Additionally, central nervous system, cardiovascular and diuretic, and antimicrobial agents are included. Credit for this course will be based on didactic quizzes, examinations, and assignments. (60 lecture hours per enrollment period) *Prerequisite: Consent of the instructor.*

RESC 3434 Intro to Clinical Practice

4 credits

This introductory clinical course provides the student with the opportunity to develop general patient assessment and therapeutic skills while rotating through adult and pediatric floors, outpatient pediatric asthma clinic, and the emergency department. In addition students will have the opportunity to: 1) develop patient assessment skills using data available in the routine care setting; 2) prepare case presentations and patient documentation on a weekly basis; 3) develop skills in delivering routine care, including oxygen and aerosol therapy, secretion clearance techniques, and lung expansion; 4) develop and practice skills in assembling, using, and troubleshooting medical devices; and 5) participate in reflective self-evaluation. Evaluation is based upon completion of competency check-offs and weekly case studies. (240 clinical hours per enrollment period) *Prerequisites: AHA Basic Life Support Certification; Completion*

of all junior-level didactic and laboratory courses with grade of "C" or better, or completion of degree plan sequence for Alternate Track students.

RESC 3513 Pathophysiology and Patient Assessment **5 credits**

This introductory course provides the student an opportunity to obtain knowledge, skills, and practice related to patient assessment, patient care plans, and the pathophysiology of cardiopulmonary diseases. Students will have the opportunity to: 1) review patients' charts and correctly interpret data obtained from the history, physical examination, laboratory test results, and progress notes; 2) describe the similarities and differences in obstructive and restrictive pulmonary diseases; 3) describe the pathophysiological processes of common pulmonary diseases; 4) differentiate between disease processes on the basis of clinical manifestations and laboratory findings; 5) identify the physiological manifestations of specific disease states; and 6) evaluate acutely and chronically ill patients based on laboratory findings, physical examination, chest X-ray findings, and pulmonary function studies. Credit hours (5) to include: 60 lecture hours; 15 hours of practicum for competency evaluations, and 4 to 12 hours of hospital shadowing experience. (79–87 hours per enrollment period)

RESC 3523 Clinical Applications of Mechanical Ventilation **5 credits**

This intermediate course provides the student with an opportunity to develop knowledge and skills necessary for the initiation, application and monitoring of mechanical ventilation. Lecture topics include: electronic, pneumatic, and functional principles of operation and use of accessory monitoring equipment. Additional lecture topics include: clinical indications for mechanical ventilation, intubation, airway maintenance and clearance techniques, physiologic effects of mechanical ventilation, monitoring parameters, and weaning techniques. Special case presentations will support the integration of pathologic conditions treated with ventilatory techniques. (75 lecture hours per enrollment period) *Prerequisite: Successful completion of all fall semester junior courses.*

RESC 3621 Physiologic Monitoring **6 credits**

This upper-level course provides the student an opportunity to develop skills related to medical instruments and their use in monitoring physiologic parameters and in diagnostic procedures. The course includes principles of pressure monitoring, cardiac output monitoring, end tidal gas analysis, blood gas analysis, pulse oximetry, transcutaneous monitoring, metabolic assessments, fiberoptic bronchoscopy, lung biopsy, ventilation/perfusion scans, exercise stress testing, cardiac catheterization, and extracorporeal circulation. In addition, this course includes lecture topics from advanced pulmonary physiology with particular emphasis on ventilation/perfusion relationships. Credit for this course will be based on didactic examinations, student presentations, and course papers. (75 lecture hours per enrollment period) *Prerequisite: Successful completion of all fall semester junior level courses.*

RESC 4068 Clinical Internship and Specialty Rotations Three (III) **3–5 credits**

(credit hours may vary based upon elective chosen)

This clinical internship provides the student the opportunity to: 1) refine clinical assessment skills; 2) apply nationally accepted clinical practice guidelines to the evaluation and treatment of patients; 3) develop the skills necessary to attempt specialty credentialing examinations (e.g., the Neonatal Pediatric Specialists (NPS) and Registered Pulmonary Function Technologist (RPFT) credentials offered through the National Board for Respiratory Care, or the Asthma Educator Certification (AEC); and

4) develop the skills necessary to attempt specialty life support certification (e.g., Neonatal Pediatric Resuscitation (NPR), Pediatric Advanced Life Support (PALS), Advanced Trauma Life Support-ATLS, or the Advanced Burn Life Support (ABLS). Elective clinical areas may include neonatal, pediatric, or adult critical care; pulmonary functions; asthma outpatient clinic; emergency department; burn units; advanced floor care (assessment team); Camp RAD; the Investigational Research Laboratory; student teaching laboratories; home care; and flight physiology. (Total clinical hours vary between 180-300 per enrollment period) *Prerequisite: Successful completion of RESC 4554 Adult Critical Care Clinic II, RESC 4355 Neonatal and Pediatric Critical Care Clinic II, and ACLS certification.*

RESC 4090 Topics in Respiratory Care

1-4 credits

This upper-level course provides the student with the opportunity to broaden his or her understanding of his or her role as a health professional by: 1) participating in a variety of learning experiences including seminars, lectures, public speeches, and independent study; and 2) demonstrating the ability to gather information on health-related topics and issues, analyze that information, and present findings or conclusions. Such studies may be directly related to the student's professional discipline, or they may deal with concepts, issues, and trends in allied health sciences. The course may be repeated for credit when content varies. (15 - 60 hours per enrollment period)

RESC 4093 Independent Study

4-8 credits

This upper-level course provides the student with the opportunity to pursue specialty areas such as management, education, and clinical research. The student must meet with program faculty for selection of the specific course material and the development of an educational plan prior to enrolling in the course. Arrangements for preceptorships in management or medical supervision for clinical research will be made through affiliated institutions. (60–120 hours per enrollment period) *Prerequisites: Successful completion of RESC 4143 Program Entry-Level Comprehensive Exam and RESC 4153 Program Written Registry Comprehensive Exam.*

RESC 4143 Program Entry-Level Comprehensive Exam

1 credit

This upper-level course provides the opportunity to assess the student's competency in entry-level respiratory care skills. Students who have successfully completed the first year of the respiratory care program are required to take and pass the entry-level comprehensive examination. This examination is parallel to the National Board for Respiratory Care Entry-Level Examination. Students will be allowed up to three attempts to achieve a passing score (70% or greater) on the examination. Students who do not complete this course by achieving a passing score on the entry-level comprehensive examination will not be eligible to enroll for the spring semester of the senior year. (15 lecture hours per enrollment period) *Prerequisite: Successful completion of all junior-level courses.*

RESC 4165 Advanced Cardiac Life Support

1 credit

This upper-level course provides the student with the opportunity to acquire knowledge and skills related to emergency care procedures for treating patients in cardiovascular distress and/or respiratory failure. Completion of the course requires that the student pass the certification in Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS). *Prerequisite: Senior-level status.*

RESC 4166 Clinical Simulations

1 credit

This upper-level course provides the student with the opportunity to acquire knowledge and skills related to emergency care procedures for treating patients in cardiovascular distress and/or respiratory failure. Completion of the course requires that the student pass the certification in Basic Life Support (BLS) and Advanced Cardiac Life Support (ACLS).

RESC 4245 Neonatal and Pediatric Critical Care Clinic I **2 credits**

This clinical practicum provides the student the opportunity to develop knowledge and skills in patient assessment and delivery of therapeutics to neonatal and pediatric patients. The student will have the opportunity, with guided supervision in both the Pediatric Intensive Care Unit (PICU) and the Neonatal Intensive Care Unit (NICU) to: 1) perform patient assessment(s); 2) administer aerosol and oxygen therapy, 3) apply bronchial clearance maneuvers; 4) maintain and perform artificial airway care; 5) participate in initial resuscitation of the newborn infant; 6) observe and assist with patient transport; and 7) provide mechanical ventilatory support. Evaluation is based upon completion of competency check-offs. (140 clinical hours per enrollment period) *Prerequisites: RESC 3322 Neonatal and Pediatrics Didactic Course and American Heart Association Neonatal Resuscitation Program Certification.*

RESC 4246 Specialty Rotations Clinical I **2 credits**

This clinical rotation reinforces the Physiologic Monitoring lecture course and provides the student with supervised experience and practice in physiologic monitoring and diagnostic techniques. Students will follow scheduled rotations through several specialty areas that may include the Pulmonary Functions Lab, Cardiovascular ICU, the operating room, the Investigational Research Lab, outpatient rehabilitation, outpatient pediatric asthma clinic, and the Emergency Department. Students will have the opportunity to: 1) perform pulmonary function tests on a variety of patients; 2) observe cardio-diagnostic tests, including 12-lead EKGs, cardiac stress tests, and echocardiography; 3) perform hemodynamic measurements, including measurement of systemic and pulmonary vascular pressures, measurement of cardiac output using thermal dilution, and calculation of vascular resistance; and 4) perform and interpret arterial blood gases and oxygen saturation measurements. (140 hours per enrollment period) *Prerequisites: RESC 3434 Intro to Clinical Practice and RESC 3235 Intro to Diagnostics and Specialty Care Clinics.*

RESC 4253 Program Written Registry Comprehensive Exam **1 credit**

This upper-level course provides the opportunity to assess the student's competency in registry-level respiratory care skills. The student who has successfully completed the first four semesters and the entry-level comprehensive examination is required to take and pass the registry comprehensive examination. This examination is parallel to the National Board for Respiratory Care Registry Examination. The student will be allowed up to three attempts to achieve a passing score (70% or greater) on the examination. The student who does not complete this course by achieving a passing score on the registry comprehensive examination will not be eligible to enroll for the summer session of the senior year. (15 lecture hours per enrollment period) *Prerequisites: Successful completion of junior-level courses and fall semester of senior year.*

RESC 4264 Professional Issues **2 credits**

This course introduces the student to research and publication procedures, and explores current research literature relevant to the respiratory care profession. Research articles are discussed to clarify issues involving various aspects of the

profession, as well as research methods. The issues explored relate to global health care, accreditation, credentialing processes, management, education, and clinical practice. (45 lecture hours per enrollment period) *Prerequisite: Senior-level status.*

RESC 4355 Neonatal and Pediatric Critical Care Clinic II **3 credits**

This clinical practicum provides the student the opportunity to further practice and refine skills experienced during Neonatal and Pediatric Critical Care Clinic I. The student will have the opportunity, under guided supervision in both the PICU and the NICU, to: 1) assess indications for and deliver aerosol and oxygen therapies; 2) perform airway clearance maneuvers; 3) provide traditional ventilatory support with emphasis on initiation, monitoring, and discontinuance; 4) provide advanced ventilatory techniques that may include non-invasive positive-pressure ventilation, high frequency oscillatory ventilation, and nitric oxide administration; 5) interpret patient data, including X-rays, blood gas data, and ventilator graphics; and 6) demonstrate “supervised independence” in managing patients with a 0.5 full time equivalent patient assignment. Evaluation is competency-based. (140 hours per enrollment period) *Prerequisite: RESC 4245 Neonatal and Pediatric Critical Care Clinic I.*

RESC 4356 Specialty Rotation Clinical II **3 credits**

This clinical rotation is a continuation of Specialty Rotation Clinic I and provides the student the opportunity to refine skills and demonstrate competency in performing diagnostic and monitoring techniques. The student will have the opportunity to: 1) perform and interpret pulmonary diagnostic tests in both inpatient and outpatient clinics (e.g., asthma clinic and rehabilitation clinics); 2) provide instruction for patients about chronic lung disease, including the pathology of the disease, diagnostic tests, treatment modalities, and drug therapy; 3) demonstrate quality-assurance procedures on diagnostic equipment, including pulmonary function and blood gas equipment; 4) measure and evaluate hemodynamic data from patients in critical care areas (e.g., rotations at the Methodist Cardiovascular Intensive Care Unit (CVICU) and the Shriners Burns Hospital); and 5) evaluate data from other specialty tests (metabolic tests, polysomnography, and bronchoscopy). (120 hours per enrollment period) *Prerequisites: RESC 4444 Adult Critical Care Clinical I and RESC 4246 Specialty Rotation Clinical I.*

RESC 4361 Rehabilitation and Home Care **3 credits**

This upper-level course provides the student with the opportunity to develop knowledge and skills related to long-term care and chronically ill and/or debilitated pulmonary patients. Lecture topics include: exercise testing and prescription, components of rehabilitation programs, home care concepts, reimbursement, and specialized home care procedures. Credit for this course is based on assignments, quizzes, and examinations. (52.5 lecture hours per enrollment period) *Prerequisite: Successful completion of RESC 4153 Written Registry Comprehensive Exam.*

RESC 4367 Adult Critical Care Clinic III **3 credits**

This course provides students with the opportunity to further develop clinical knowledge and skills in caring for adult patients in emergency and critical care settings. The student will have the opportunity to: 1) apply patient care protocols in the delivery of oxygen therapy, aerosol therapy, and lung clearance; 2) evaluate monitoring data and appropriately manage patients receiving mechanical ventilation; 3) demonstrate proper application of evidenced-based weaning protocols; and 4) review and evaluate patient care plans based on standards of care such as the American Association for Respiratory Care (AARC) Clinical Practice Guidelines or other nationally accepted

guidelines for diagnosis and treatment (e.g., guidelines for asthma, chronic obstructive pulmonary disease, pneumonia) (180 clinical hours) *Prerequisite: RESC 4554 Adult Critical Care Clinic II or career ladder status.*

RESC 4444 Adult Critical Care Clinic I

4 credits

This clinical practicum provides the student the opportunity to develop knowledge and skills in patient assessment and delivery of therapeutics in the adult critical care areas. The student practices under direct supervision in medical, surgical, and cardiovascular ICU areas. The student will have opportunity to: 1) observe bedside diagnostic procedures, including fiberoptic bronchoscopy, arterial blood gases, and transport procedures; 2) manage the patient-ventilator system including: initiation, maintenance, monitoring, and discontinuance procedures; 3) establish and maintain artificial airways; 4) apply secretion clearance maneuvers; 5) administer aerosolized medications; and 6) participate in patient care rounds and case study presentations with critical care physicians. Evaluation is based on successful completion of designated competencies. (240 clinical hours per enrollment period) *Prerequisite: RESC 3523 Clinical Applications of Mechanical Ventilation; Corequisite: ACLS training.*

RESC 4554 Adult Critical Care Clinic II

5 credits

This clinical practicum provides the student the opportunity to further develop clinical knowledge and skills in caring for adult patients in critical care settings and in the Emergency Department. The student will have opportunity to 1) manage the patient-ventilator system to include: initiation, maintenance, monitoring, and discontinuance; 2) establish and maintain artificial airways; 3) apply secretion clearance maneuvers to ventilated patients; 4) participate in transport of critical care patients; 5) administer medications to ventilated critical care patients; 6) participate in patient care rounds and case study presentation with critical care physicians; and 7) demonstrate “supervised independence” in managing patients with a 0.5 full time equivalent patient assignment. Evaluation is competency based. (240 hours per enrollment period) *Prerequisite: RESC 4444 Adult Critical Care Clinic I and successful completion of ACLS course RESC 4165 ACLS.*

Admission Requirements

To be considered for admission to the Program in Respiratory Care, all applicants must present official documentation of the following:

1. 61 semester hours of specified prerequisites from an accredited college or university
2. A minimum cumulative grade point average (GPA) of 2.0 on a 4.0 scale
3. Career Ladder applicants must present their NBRC Registry Credential
4. Please note: a grade of “C” or higher is required to satisfy any prerequisite
5. Please contact the department chair for transcript evaluation

Program Prerequisites

Required of BOTH Career Ladder and Foundation Program applicants

College Algebra	3
Elective (must be approved by advisor)	3
English Composition	6
English Literature (may substitute one Speech course)	6
General Chemistry with Lab (recommend substituting Health Professions Sequence)	8
Human Anatomy and Physiology with Lab	8
Medical Terminology	1
Microbiology with Lab	4
Physics with Lab	4
Social / Behavioral Science	6
United States History (may include Texas History)	6
United States Government (must include Texas Government)	6
Visual & Performing Arts (Arts, Dance, Music, Applied Music, Music Ensemble, Drama)	3
Total Prerequisite Semester Credit Hours	64