

MASTER OF SCIENCE IN RESPIRATORY CARE

Master of Science in Respiratory Care Overview

This program provides an excellent career opportunity to join the first approved entry level to practice Master of Science in Respiratory Care (MSRC) degree program in Texas. Our program is one of four MSRC first-professional degree programs in the country and provides a great opportunity to become a leader in the Respiratory Care profession.

The Master of Science in Respiratory Care degree requires a minimum of 92 hours of credit for graduation. This program requires the completion of a baccalaureate degree in any field and 23 semester hours of program prerequisite requirements prior to admission to the Health Science Center. The program requirements may be completed at any accredited college or university. Prospective students do not need any healthcare experience to be considered. The professional phase includes more than 1200 hours of in-hospital clinical practice. As a leadership program in respiratory care, this course of study aspires to provide graduates with the foundation needed to assume professional leadership roles in clinical practice, research, education and management. Upon completion of the program, graduates are eligible to take the national board examinations in respiratory care as well obtain a state license.

Master of Science in Respiratory Care Online Program Overview

The Master of Science in Respiratory Care Online Program is for; (1) the Registered Respiratory Therapist (RRT) who has earned a Bachelor of Science in respiratory therapy/respiratory care or (2) the Registered Respiratory Therapist (RRT) who has an earned Bachelor of Science or Bachelor of Arts degree in any field and has completed the required program requirements. The graduates of this program have many career options including leadership positions in clinical practice, management, education, research or further graduate education. The Master of Science in Respiratory Care Online program will require the student to complete 33 graduate credit hours for graduation from the Health Science Center.

Admissions Requirements

Admission to the program is on a competitive basis. Student selection is based on a number of factors including overall grade point average, prerequisite grade point average, consistency of academic performance, coursework completed prior to application, and interpersonal abilities. Application deadline is June 15.

Requirements for admission to the professional phase of the Master of Science in Respiratory Care (MSRC) program include:

- Completion of a bachelor's degree in any major from a regionally accredited college/university *prior* to program entry.
- Completion of all required professional prerequisite courses with a "C" or better.
 - Anatomy & Physiology I & II Lectures & Laboratories (8 semester credit hours) *OR* Anatomy I Lecture & Laboratory AND Physiology I Lecture & Laboratory (8 semester credit hours)
 - Any Chemistry Lecture & Laboratory (4 semester credit hours)
 - Any Physics Lecture & Laboratory (4 semester credit hours)

- Microbiology Lecture & Laboratory (4 semester credit hours)
- Statistics Lecture *OR* Statistics for Psychology Lecture (3 semester credit hours)
 - *Students may be allowed to co-enroll in the program while working to complete a suitable Statistics course. The course must be completed by the end of the first semester enrolled to continue in the program.*
- Senior standing at the time of application and the ability to complete all preprofessional coursework and earn a bachelor degree by the beginning of the Fall semester of the of the first year.
- Overall GPA of 2.5 on a 4.0 scale
- Completed application to the program and submission of official transcripts for all college coursework completed.
 - Completion of the online Allied Health Centralized Application System (AHCAS), <https://ahcas.liaisoncas.com>, or Texas Common Application, <https://www.applytexas.org>
 - Payment of non-refundable \$95 application fee when using the AHCAS application or a \$60 application fee if using the Texas Common Application
- Two letters of recommendation: attesting for applicant's readiness for graduate level studies

International Applicants only:

- Each foreign transcript will be evaluated to ascertain that courses are equivalent in content and rigor to prerequisite courses offered by regionally accredited higher education institutions in the United States.
- Submit Test of English as a Foreign Language (TOEFL) scores
 - *Minimum* TOEFL scores 560 (paper) or 80 (Internet)

Application Requirements

- Completion of the online Allied Health Centralized Application System (AHCAS), <https://ahcas.liaisoncas.com>, or Texas Common Application, <https://www.applytexas.org>
 - Payment of non-refundable \$95 application fee when using the AHCAS application or a \$60 application fee if using the Texas Common Application
- Submission of the following documents to AHCAS or Office of University Registrar contingent on which application system was used
 - All Official Transcripts from *each* college/university attended. Applicants who are enrolled in college courses at the time of application should submit official transcripts showing courses in progress. An updated transcript must be submitted upon completion of courses.
 - Two completed letters of recommendation
 - **Note:** Transcripts from institutions *outside* the United States must be evaluated by an acceptable NACES Members organization. For additional information – www.naces.org (<http://www.naces.org>)

Required Documents (if you are accepted) to the Master of Science in Respiratory Care program:

If you are made an *official offer of acceptance* for the Health Science Center Master of Science in Respiratory Care (MSRC) program, **all of the following items are required prior to matriculation:**

- Non-refundable \$250.00 School of Health Professions Tuition Deposit. Directions for this process will be sent to accepted students.

- Completion of a background check. Directions for this process will be sent to accepted students.
- **All Immunization records:** Immunization requirements can be found at the Health Science Center Student Health Center Web Page (http://shc.uthscsa.edu/immunization_info.asp) – see website for full detailed instructions. Be advised all immunizations must be completed 30 days before registration and some immunizations take 3 - 6 weeks to be effective.
- Evidence of current health insurance showing dates of coverage. Unless proof of proper insurance coverage is provided before the first day of classes, students will be charged for a health insurance policy through the university. The fee for this policy is non-removable once the payment due date passes and is non-refundable once paid.
- Final updated transcripts must be submitted upon completion of courses from each college/university to the Office of University Registrar. All Foreign transcripts must be also sent to include the original transcript and the NACES evaluated official transcript (course by course).

The University Registrar Mailing Address:

Office of the University Registrar – MC 7702
7703 Floyd Curl Drive
San Antonio, TX 78229-3900

Master of Science in Respiratory Care Online Program Admissions Requirements

Admission to the program is on a competitive basis. Student selection is based on a number of factors including overall grade point average, prerequisite grade point average, consistency of academic performance, coursework completed prior to application, and interpersonal abilities. Application deadline is June 15 for fall enrollment.

Requirements for admission to the the Master of Science in Respiratory Care (MSRC) online Program for a prospective student who holds the Registered Respiratory Therapist (RRT) credential and a Bachelor of Science in Respiratory Care OR holds the Registered Respiratory Therapist (RRT) credential and a bachelor's degree in any field as described below.

Requirements for admission to the professional phase of the Master of Science in Respiratory Care (MSRC) Online program include:

- **Holds the Registered Respiratory Therapist (RRT) credential from the National Board for Respiratory Care (NBRC).**
- Completion of a bachelor's degree in Respiratory Care/Respiratory Therapy **OR** completion of a bachelor's degree in *any major* from a regionally accredited college/university *prior* to program entry.
- Completion of all required professional prerequisite courses with a "C" or better
 - Statistics Lecture **OR** Statistics for Psychology Lecture (3 semester credit hours)
 - *Students may be allowed to co-enroll in the program while working to complete a suitable Statistics course. The course must be completed by the end of the first semester enrolled to continue in the program. All other course requirements for admission must be completed prior to beginning the MSRC ONLINE program.*
- Senior standing at the time of application and the ability to complete all preprofessional coursework by the beginning of the first semester of the of the first year.
- Overall GPA of 2.5 on a 4.0 scale

- Completed application to the program and submission of official transcripts for all college coursework completed.

International Applicants only:

- Each foreign transcript will be evaluated to ascertain that courses are equivalent in content and rigor to prerequisite courses offered by regionally accredited higher education institutions in the United States.
- Submit Test of English as a Foreign Language (TOEFL) scores
 - *Minimum* TOEFL scores 560 (paper) or 80 (Internet)

Application Requirements

- **Hold the Registered Respiratory Therapist (RRT) credential from the National Board for Respiratory Care (NBRC).**
- Completion of the online Allied Health Centralized Application System (AHCAS), <https://ahcas.liasoncas.com>, or Texas Common Application, <https://www.applytexas.org>
 - Payment of non-refundable \$95 application fee when using the AHCAS application or a \$60 application fee if using the Texas Common Application
- Submission of the following documents to AHCAS or Office of University Registrar contingent on which application system was used
 - All Official Transcripts from *each* college/university attended. Applicants who are enrolled in college courses at the time of application should submit official transcripts showing courses in progress. An updated transcript must be submitted upon completion of courses.
 - Two completed letters of recommendation
 - **Note:** Transcripts from institutions *outside* the United States must be evaluated by an acceptable NACES Members organization. For additional information – www.naces.org (<http://www.naces.org>)

Required Documents (if you are accepted) to the Master of Science in Respiratory Care ONLINE program:

If you are made an *official offer of acceptance* for the Health Science Center Master of Science in Respiratory Care (MSRC) Online program, **all of the following items are required prior to matriculation:**

- Non-refundable \$250.00 School of Health Professions Tuition Deposit . Directions for this process will be sent to accepted students.
- Completion of a background check. Directions for this process will be sent to accepted students.
- **All Immunization records:** Immunization requirements can be found at the Health Science Center Student Health Center Web Page (http://shc.uthscsa.edu/immunization_info.asp) – see website for full detailed instructions.
- Evidence of current health insurance showing dates of coverage. Unless proof of proper insurance coverage is provided before the first day of classes, students will be charged for a health insurance policy through the university. The fee for this policy is non-removable once the payment due date passes and is non-refundable once paid.

The University Registrar Mailing Address:

Office of the University Registrar – MC 7702
7703 Floyd Curl Drive
San Antonio, TX 78229-3900

Degree Requirements

To graduate from the Respiratory Care Master of Science in Respiratory Care program, students must:

- Complete all required respiratory care professional courses with a grade of **C** (75%) or better.
- Maintain a 3.0 overall GPA each semester.
- Successfully complete the self assessment examinations given by the National Board for Respiratory Care.
- Successfully complete a comprehensive end-of-year and program competency assessment.
- Successfully complete a research project (create and implement an educational project, create and implement a quality improvement plan, or create and implement a research project).
- Hold current certification in Basic Life Support for Healthcare Professionals (http://cpr.heart.org/AHA/ECC/CPRECC/Training/HealthcareProfessional/BasicLifeSupportBLS/UCM_473189_Basic-Life-Support-BLS.jsp) (BLS), Advanced Cardiac Life Support (http://cpr.heart.org/AHA/ECC/CPRECC/Training/HealthcareProfessional/AdvancedCardiovascularLifeSupportACLS/UCM_473186_Advanced-Cardiovascular-Life-Support-ACLS.jsp) (ACLS), Pediatric Advanced Life Support (http://cpr.heart.org/AHA/ECC/CPRECC/Training/HealthcareProfessional/Pediatric/UCM_473190_Pediatric.jsp) (PALS) and Neonatal Resuscitation Provider course (NRP) (<http://www2.aap.org/nrp>).
- Complete all University requirements for graduation.

Online Program Requirements

To graduate from the Respiratory Care Master of Science in Respiratory Care Online program, students must:

- Complete all required respiratory care professional courses with a grade of **C** (75%) or better.
- Maintain a 3.0 overall GPA each semester.
- Hold current Registered Respiratory Therapist (RRT) credential.
- Complete all University requirements for graduation.

Master of Science in Respiratory Care Sample Plan of Study

First Year

Fall		Credit Hours
RESC 5002	Introduction to Respiratory Care	5
RESC 5005	Pharmacology	4
RESC 5010	Cardiopulmonary Physiology	5
RESC 5011	Patient Assessment	5
Spring		
RESC 5020	Diseases Affecting the Cardiopulmonary System	4
RESC 5023	Cardiopulmonary Diagnostics and Pulmonary Function Testing	3
RESC 5030	Pediatric & Neonatal Respiratory Care	4
RESC 5031	Critical Care & Mechanical Ventilation	5
RESC 5041	Clinical Practice Introduction	1
Summer		
RESC 5013	Management & Leadership in Health Profession	3

RESC 5015	Education in Respiratory Care	3
RESC 5017	Introduction to Research	3
RESC 5042	Critical Care Introduction	3

Second Year

Fall

RESC 6011	Clinical Seminar 1	2
RESC 6019	Clinical Practice 1	12
RESC 6030	Research Project 1	2

Spring

RESC 6029	Clinical Practice 2	12
RESC 6031	Research Project 2	2
RESC 6033	Clinical Seminar 2	2

Summer

RESC 6032	Clinical Practice 3	8
RESC 6034	Research Project 3	2
RESC 6035	Clinical Seminar 3	2

Total Credit Hours: 92.0

Master of Science in Respiratory Care Online Program for RRT with BSRC OR RRT with Bachelor's degree in any field

First Year

Fall

		Credit Hours
RESC 5010	Cardiopulmonary Physiology	5

Spring

RESC 5020	Diseases Affecting the Cardiopulmonary System	4
RESC 6001	Respiratory Care Professional Issues and Trends	4

Summer

RESC 5013	Management & Leadership in Health Profession	3
RESC 5015	Education in Respiratory Care	3
RESC 5017	Introduction to Research	3

Second Year

Fall

RESC 6011	Clinical Seminar 1	2
RESC 6030	Research Project 1	2

Spring

RESC 6031	Research Project 2	2
RESC 6033	Clinical Seminar 2	2

Summer

RESC 6034	Research Project 3	2
RESC 6035	Clinical Seminar 3	2

Total Credit Hours: 34.0

Credit By Exam

RESC 5002	Introduction to Respiratory Care	5
RESC 5005	Pharmacology	4
RESC 5011	Patient Assessment	5
RESC 5023	Cardiopulmonary Diagnostics and Pulmonary Function Testing	3

RESC 5031	Critical Care & Mechanical Ventilation	5
RESC 5041	Clinical Practice Introduction	1
RESC 5042	Critical Care Introduction	3
RESC 6019	Clinical Practice 1	12
RESC 6029	Clinical Practice 2	12
RESC 6032	Clinical Practice 3	8
Total Credit Hours		58

Master of Science in Respiratory Care Objectives/ Program Outcomes

Goals of the Master of Science in Respiratory Care Program

The Respiratory Care Program is designed to offer the student an environment that fosters learning through didactic, laboratory and clinical experiences so that the student will be able to develop the knowledge, skills and attitudes for the profession of respiratory care.

Our minimum goal for the Master of Science in Respiratory Care (MSRC) program is designed to provide graduates with additional knowledge, skills, and attributes in leadership, management, education, research, or advanced clinical practice both to meet their current professional goals and to prepare them for practice as advanced degree respiratory therapists.

In addition the MSRC program will prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practice as performed by registered respiratory therapist (RRT).

Lastly, the MSRC program will prepare leaders for the field of respiratory care by including curricular content that includes courses and objectives related to the acquisition of skills in management, education, research and advanced clinical practice. These will lead to:

- Preparation of strong advanced level respiratory therapists for advanced clinical practice.
- Provide leadership development in the areas of management, education and research.
- Develop clinical specialists in the following areas: adult, pediatric and neonatal critical care, chronic disease management, cardiopulmonary diagnostics, pulmonary rehabilitation and asthma education specialist.
- Prepare future faculty for college and university respiratory care educational programs.
- Develop individuals who are able to formulate appropriate questions, organize and test hypotheses, and apply research results to the practice of respiratory care.

Program Policies and Regulations Advancement, Probation and Dismissal Academic

All respiratory care courses are taught in a sequential manner and each professional course in the program serves as the prerequisite for the subsequent course. Therefore, courses must be taken in the planned sequence.

Master of Science in Respiratory Care

Continuation as a Respiratory Care student is dependent on maintenance of a cumulative grade point average. Master of Science in Respiratory Care Students must maintain an overall GPA of 3.0 (B). If the students

GPA falls less than a 3.0 the student will be placed on probation. While on probation, a student must maintain a B average in those courses for which he or she is registered or be considered for dismissal.

A student who earns a grade of a D or F in any course in any semester may not be permitted to register for subsequent courses or semesters, and the student may be subject to dismissal from the program. (Refer to current Health Science Center Catalog for more information).

The Respiratory Care Student Progress Committee (SPC) may recommend dismissal, probation, repetition of courses, repetition of the year or other actions as deemed appropriate by the SPC.

Clinical Rotation Assignments & Additional Costs

In addition to required tuition and fees, there are costs for textbooks, technology, scrubs, and equipment. ***The clinical rotation experiences included in the curriculum WILL require students relocate outside of San Antonio for the duration of the rotations. All students are REQUIRED to participate in a "rural" rotation outside of San Antonio, Texas.*** Clinical rotation expenses will vary according to individual arrangements and depend on the cost of travel, temporary housing, maintenance of local accommodations, etc. Students are encouraged to budget for major expenditures that could be associated with these course experiences. Detailed information about program costs can be found on the Respiratory Care website.

Courses

RESC 3002. Fundamentals of Respiratory Care. 5 Credit Hours.

The course will present the principles of chemistry and physics as they apply to respiratory care. Students will have the opportunity to gain hands-on experience with basic respiratory care equipment. Specific types of therapy are examined to understand the principles of application to patients, indications, hazards, contraindications, select, assemble, and troubleshoot equipment. Equipment will include oxygen delivery devices, aerosol generators, medication delivery devices, pressure ventilators, gas delivery, metering and analyzing devices, percussor, positive pressure devices, environmental devices, manometers, gauges, and vacuum systems.

RESC 3005. Respiratory Care Pharmacology. 3 Credit Hours.

This course introduces the physiologic and pharmacologic basis of pulmonary and cardiac medications. Students will study several aspects of the formulation and preparation of the most commonly prescribed respiratory drugs. Pharmacodynamics and pharmacokinetics will be discussed along with drug formulation, drug dosage calculations, indications, contraindications and side effects of cardiac and pulmonary medications. Topics covered include an overview of bronchactive agents, anti-inflammatory drugs, anti-asthmatics, neuromuscular blocking agents, diuretics, cardiac drugs and drugs that affect the central nervous system.

RESC 3007. Cardiopulmonary Physiology. 5 Credit Hours.

This course provides an in-depth study of cardiac and pulmonary anatomy and physiology, as well as the diagnostic procedures commonly used in the hospital to evaluate these systems. Topics include the function of the respiratory system, ventilatory mechanics, gas transport in the blood, natural and chemical regulation of breathing, circulation, blood flow and pressure, and cardiac output. The heart-lung relationship and clinical applications of these phenomena in the cardiopulmonary system will be emphasized.

RESC 3008. Introduction to Clinical Practice. 1 Credit Hour.

The introduction to clinical practice provides the students the opportunity to observe and attain clinical competencies related to respiratory care procedures in general medical and surgical floors. This course introduces students to the clinical respiratory care procedures. Topics include: introduction to the hospital and patient assessment, medical gas therapy, aerosol therapy, airway clearance therapy, hyperinflation therapy and airway care.

RESC 3009. Introduction to Critical Care. 3 Credit Hours.

This course provides the students the opportunity to observe and achieve competencies related to respiratory care procedures in the critical care units, the diagnostic labs, and other specialty areas. The topics include initiation of mechanical ventilation, patient stabilization and monitoring, measurement and evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, extubation, arterial line samples, arterial puncture, blood gas analysis, and noninvasive monitoring. Clinical Practice observation and previous semester courses are a prerequisite to take this course.

RESC 3010. Cardiopulmonary Pathophysiology I. 4 Credit Hours.

Provides a comprehensive approach to etiology, pathophysiology, clinical manifestations, diagnosis, treatment and prognosis of common pulmonary diseases and syndromes. Main topics include obstructive and restrictive pulmonary disorder.

RESC 3011. Introduction to Patient Assessment. 5 Credit Hours.

This course will introduce the student to the fundamentals of respiratory assessment to include review of existing data in the patient record, patient history, physical examination, oximetry, blood gases, respiratory monitoring, pulmonary function assessment, laboratory studies, chest and upper airway radiographs, ventilation/perfusion scans, bedside EKG interpretation, cardiovascular monitoring, and nutritional assessment. The student will be introduced to the concepts associated with chronic care and disease management.

RESC 3018. Diseases Affecting the Respiratory System. 4 Credit Hours.

The course provides a comprehensive approach to etiology, pathophysiology, clinical manifestations, diagnosis, treatment, and prognosis of common pulmonary diseases and syndromes. Main topics include obstructive and restrictive pulmonary and cardiovascular disorders. Non-respiratory disorders impacting cardiopulmonary function commonly encountered in the critical care unit will be discussed.

RESC 3019. Clinical Practice 1. 3 Credit Hours.

This course introduces students to clinical practice in basic respiratory care procedures. Topics include: introduction to the clinical affiliate, patient assessment, medical gas therapy, oxygen therapy, and aerosol therapy. In addition, hyperinflation therapy, airway clearance therapy, airway care using nasal, endotracheal and tracheal tubes is introduced in basic care situations. Case presentations are required to integrate clinical and classroom theory.

RESC 3020. Cardiopulmonary Pathophysiology 2. 3 Credit Hours.

Provides a comprehensive approach to etiology, pathophysiology, clinical manifestations, diagnosis, treatment and prognosis of common diseases and syndromes that affect the respiratory system. Non-respiratory disorders impacting cardiopulmonary function commonly encountered in the critical care unit will be discussed including renal and cardiovascular diseases.

RESC 3023. Pulmonary Function Testing. 3 Credit Hours.

This course provides a comprehensive overview of diagnostic tests used to evaluate normal and abnormal pulmonary function. Students will have the opportunity to perform, interpret and evaluate various tests of lung functions, including spirometry, measurement of lung volumes, diffusing capacity and metabolic measurements. Additionally, students will learn how to operate, calibrate and do quality control on pulmonary function and gas analysis equipment.

RESC 3029. Clinical Practice 2. 4 Credit Hours.

Critical respiratory care is introduced to include all tasks presented in Clinical Practice I as applied to the intensive care unit. In addition, tracheostomy care, ventilator monitoring, arterial puncture and blood gas analysis, endotracheal intubation, EKG services, and bronchoscopy observation are introduced. Case presentations are required to integrate clinical and classroom theory. Prerequisites: RESC 3019.

RESC 3030. Respiratory Care across the Life Span. 3 Credit Hours.

This course will be available ONLY for degree completion students online. This course will provide students with a holistic view of how respiratory therapists interact with patients of all ages. Principles, practices, theories and therapeutics related to cardiopulmonary health and disease across the neonatal, pediatric, adolescent, adulthood and geriatric periods will be covered. Presenting respiratory care as a continuum will provide students with a unique developmental overview, designed to enhance their didactic and clinical acumen.

RESC 3031. Critical Respiratory Care Management. 5 Credit Hours.

This course provides a study of invasive and non-invasive patient monitoring techniques and equipment. Invasive topics will include arterial pressure monitoring, central venous and pulmonary artery catheters, as well as cardiac output measurement. Non-invasive monitoring topics include pulse oximetry, transcutaneous monitoring, inductance plethysmography, capnography and electrocardiogram. It also covers instruction on the phase of adult critical care and continuous mechanical ventilation. The history of mechanical ventilation, modes of mechanical ventilatory support, implementation, patient stabilization, monitoring, hemodynamics, ventilator weaning and discontinuance will be covered.

RESC 4003. Pediatric and Neonatal Respiratory Care. 4 Credit Hours.

The processes of growth and development relating to respiratory care, from the fetus to the adolescent, will be discussed. The study relates physiologic function to respiratory care including assessment, evaluation, and treatment. Topics include fetal growth and development, neonatal growth and development, fetal assessment, fetal evaluation, neonatal assessment, neonatal evaluation, neonatal respiratory care, neonatal pathology, pediatric pathology, and pediatric respiratory care.

RESC 4009. Clinical Practice 3. 5 Credit Hours.

Students will have an opportunity to further develop skills required in the intensive care of the respiratory patient. Topics include comprehensive ventilator management, measurement and evaluation of hemodynamic variables, noninvasive monitoring, and pulmonary function laboratory. Specialty rotations include: intubation, hyperbaric oxygen therapy units, cardiac catheterization, chocardiology, pulmonary rehabilitation and home care. This course also introduces the student to neonatal and pediatric care. Case presentations are required to integrate clinical and classroom theory. This clinic also includes a review of respiratory care as it pertains to the national credentialing examinations administered by the National Board for Respiratory Care (NBRC).

RESC 4010. Advanced Critical Care Management. 5 Credit Hours.

An overview of the various areas comprising cardiopulmonary diagnostics as they apply to neonate, pediatric and adult populations. Topics include advanced hemodynamic monitoring, ventilation/perfusion scanning, cardiac catheterization and noninvasive cardiology. In addition, extracorporeal membrane oxygenation (ECMO), mechanical circulatory assistance and perfusion technology will be introduced. This course has a laboratory component to utilize the respiratory care equipment used for ventilating neonates, pediatric and adult patients.

RESC 4011. Patient Care Management Seminar. 2 Credit Hours.

This course is a review of respiratory care as it pertains to the national credentialing examinations administered by the National Board for Respiratory Care (NBRC). A series of simulation examinations will be used to help students prepare for these exams. Emphasis will be placed on decision making and problem solving as they relate to clinical respiratory care. Topics include the Therapist Multiple-Choice Examination (TMC) and the Clinical Simulation Examination (CSE) preparation.

RESC 4012. Disease Management, Rehabilitation, and Extended Care. 4 Credit Hours.

This course provides an overview of the concepts, procedures, and equipment utilized in the delivery of long-term care to persons with a chronic cardiopulmonary disorder. The development and implementation of disease management programs for the care of patients with asthma, COPD, and other chronic conditions is presented. Pulmonary rehabilitation, patient education, and smoking cessation programs are reviewed. Provision of health care services in the home and other nonacute settings is examined, along with technological and procedural aspects of cardiopulmonary equipment.

RESC 4013. Leadership and Management in Respiratory Care. 3 Credit Hours.

This course is an introduction to management principles and problems and their relation to health care organizations. The duties and obligations of the healthcare manager are covered and related to various leadership strategies. The student will develop an understanding of their own personal leadership style and how to effectively utilize their strengths in a leadership capacity. The primary focus is on hospital-based respiratory care departments and alternative settings. Open to seniors only.

RESC 4014. Clinical Practice 1. 9 Credit Hours.

Students will have an opportunity to develop skills required in the basic floor and intensive care of the respiratory patient. Topics include patient assessment, oxygen therapy, aerosol therapy, hyperinflation therapy, airway clearance therapy, airway care using the various tracheal tubes, initiation of mechanical ventilation, comprehensive ventilator management, measurement and evaluation of hemodynamic parameters, invasive and noninvasive monitoring, arterial blood gas puncture and analysis.

RESC 4015. Education in Respiratory Care. 3 Credit Hours.

This course is an introduction to basic principles and techniques used in respiratory care education. Topics include patient education, inservice education, course design, objectives, lesson-plan development, learning activities, use of media, development of presentations, testing, and evaluation. Senior status is required.

RESC 4017. Introduction to Research. 3 Credit Hours.

This course provides an overview of the basic principles of research, research design and statistical analysis as it relates to healthcare professionals, with the goal of encouraging involvement in research after graduation. Students will develop a hypothesis, write a problem statement, review the literature, and evaluate the literature.

RESC 4018. Clinical Practice 1 Seminar. 3 Credit Hours.

Case presentations are required to integrate clinical and theory. Review of respiratory care with an emphasis on problem solving and decision making. Self Assessment credentialing examinations will be administered for preparation of the national credentialing examination. Current issues relevant to respiratory care will be discussed to include new treatments and technologies, and issues related to critical care, professional development and practice.

RESC 4021. Issues and Trends. 4 Credit Hours.

Current issues relevant to the cardiopulmonary sciences and respiratory care will be explored. Health care delivery systems, new trends in organization and management, new treatments and technologies, ethical issues in health care, as well as issues related to professional development and practice will be discussed in the capstone course for advanced standing students. For Bachelor Degree completion students only.

RESC 4024. Clinical Practice 2. 9 Credit Hours.

This clinical course develops skills for caring for critically ill patients in the adult, pediatric and neonatal units. Topics include: Patient Assessment, medical gas therapy, lung expansion therapy, airway clearance therapy, mechanical ventilation, patient stabilization and monitoring, evaluation of hemodynamic parameters, evaluation of ventilator weaning, intubation and extubation, all monitoring devices, labor and delivery and patient transport. In addition, tracheostomy care, ventilator monitoring, arterial puncture and blood gas analysis, endotracheal intubation, EKG, Pulmonary function diagnostics and bronchoscopy observation.

RESC 4028. Clinical Practice 2 Seminar. 3 Credit Hours.

Case presentations are required to integrate clinical and theory. Emphasis will be placed on decision making and problem-solving as they relate to neonatal and pediatric cardiopulmonary critical care. Current issues relevant to the neonatal and pediatric respiratory critical care will be discussed. Review of respiratory care will continue as it pertains to the Therapist Multiple Choice and Clinical Simulation credentialing examinations administered by the National Board for Respiratory Care (NBRC).

RESC 4029. Clinical Specialization. 6 Credit Hours.

Students will have an opportunity for in-depth application and reinforcement of critical care competencies. In addition, students are provided the opportunity to develop an area of specialization. Specialization areas may include neonatal/pediatrics, adult critical care, pulmonary function laboratory, advanced diagnostics, pulmonary rehabilitation, home care, management, research, or education. Prerequisites: RESC 4009.

RESC 4030. Research Practice and Principles. 3 Credit Hours.

This course provides an opportunity to expand research knowledge in practice and principles. This course provides the student with an opportunity to expand research knowledge into application. The course will provide a study of the research process including IRB application, design, data collection and reporting. Topics include scientific method, theory, development of research questions, issues of measurement, models of experimental and non experimental designs. The learner will conduct a research project and write a manuscript.

RESC 4040. Capstone Project. 4 Credit Hours.

The capstone course is focused on a project on current issues in any area of cardiopulmonary sciences, including quality improvement, disease management, clinical critical care, leadership or management or patient education. The project shall focus on the theory, analysis and current practices and issues.

RESC 4091. Independent Study. 1-6 Credit Hours.

This course includes independent reading, research, discussion, and/or writing under the direction of a faculty member. The course may be repeated.

RESC 5002. Introduction to Respiratory Care. 5 Credit Hours.

This course will introduce the student to respiratory therapies, protocols and hands-on experience with respiratory care equipment to gain experience. Specific modes of therapy are examined to recognize principles of application to patients, indications, hazards, contraindications, and efficacy. The equipment this course will focus include; medical gases, oxygen delivery devices, humidifiers, aerosol generators, pressure ventilators, gas delivery, metering and analyzing devices, percussors, environmental devices, manometers, gauges and vacuum systems, manual resuscitators, artificial airways, intubation equipment, maintenance of artificial airways, tracheostomies secretion removal devices.

RESC 5005. Pharmacology. 4 Credit Hours.

This course presents the physiologic and pharmacologic basis of cardiopulmonary medications. This course describes several aspects of formulation and preparation of the most commonly prescribed respiratory drugs. Indications, contraindication, and side effects of drugs related to the cardiopulmonary system will be included.

RESC 5010. Cardiopulmonary Physiology. 5 Credit Hours.

This course provides a study of cardiopulmonary anatomy and physiology. Topics include the function of the respiratory system, ventilatory mechanics, gas transport in the blood, natural and chemical regulation of breathing, circulation, blood flow and pressure, and cardiac output. The cardiopulmonary relationship and clinical applications of these phenomena in the cardiopulmonary system will be emphasized.

RESC 5011. Patient Assessment. 5 Credit Hours.

This course provides the fundamentals of respiratory assessment beginning with the review of existing data in the patient record, patient history, physical examination, oximetry, blood gases, respiratory monitoring, laboratory studies, chest and upper airway radiographs, ventilation/perfusion scans, bedside EKG interpretation, cardiovascular monitoring, and nutritional assessment. These data, procedures, and equipment will be utilized in the delivery of care to patients with chronic cardiopulmonary disorders in alternate care settings. Cardiopulmonary rehabilitation, tobacco education programs, respiratory therapy protocols, and case management will be incorporated into patient care plans.

RESC 5012. Respiratory Care Professional Issues and Trends. 3 Credit Hours.

An online course will provide the student with current trends and issues relevant to cardiopulmonary care. Health care delivery systems, management, treatments and technologies, ethical issues in health care, as well as issues related to professional development and practice will be discussed.

RESC 5013. Management & Leadership in Health Profession. 3 Credit Hours.

Leadership principles and management of respiratory care departments, health care organizations and programs will be studied.

RESC 5014. Advanced Critical Respiratory Care Management. 4 Credit Hours.

An overview of the various areas comprising cardiopulmonary diagnostics. Topics include advanced hemodynamic monitoring, ventilation/ perfusion scanning, cardiac catheterization, and noninvasive cardiology. In addition, extracorporeal membrane oxygenation, mechanical circulatory assistance, and perfusion technology will be introduced.

RESC 5015. Education in Respiratory Care. 3 Credit Hours.

This course is an introduction to basic principles and techniques used in respiratory care education. Topics include patient education, inservice education, course design, objectives, lesson-plan development, learning activities, use of media, development of presentations, testing, and evaluation.

RESC 5017. Introduction to Research. 3 Credit Hours.

This course provides an introduction to the methods of scientific research to include research design and statistical analysis. Critical review of the components of research reports will be performed to include definition of the problem, review of the literature, research design, data analysis and results.

RESC 5020. Diseases Affecting the Cardiopulmonary System. 4 Credit Hours.

This course provides a broad approach to etiology, pathophysiology, clinical manifestations, diagnosis, treatment and prognosis of pulmonary diseases and disorders. This course will stress the obstructive, restrictive pulmonary and cardiovascular diseases. Non-respiratory disorders impacting cardiopulmonary function will be discussed.

RESC 5023. Cardiopulmonary Diagnostics and Pulmonary Function Testing. 3 Credit Hours.

This course focuses on normal and abnormal cardiopulmonary function utilizing diagnostic tools. The course provides hands on opportunities to perform, interpret, and evaluate various cardiopulmonary diagnostic results to include the operation, calibration, quality control, and maintenance of pulmonary function and gas analysis equipment.

RESC 5030. Pediatric & Neonatal Respiratory Care. 4 Credit Hours.

This course describes the most important concepts associated with neonatal and pediatric patient care. From fetal growth and development, through assessment and determining treatment plans for the most common neonatal and pediatric cardiopulmonary diseases. This includes cardiopulmonary congenital diseases, gastrointestinal, and neurologic diseases. The course also includes hands on opportunities to work with the respiratory care equipment used to care for neonates and pediatric patients.

RESC 5031. Critical Care & Mechanical Ventilation. 5 Credit Hours.

This course describes the role of the respiratory therapist in the critical care settings. Instruction and hands on opportunities will be provided to set-up, operate and maintain mechanical ventilators and related equipment. The course will include the history of mechanical ventilation, modes of mechanical ventilatory support, implementation, patient stabilization, monitoring, hemodynamics, ventilator weaning and discontinuance.

RESC 5041. Clinical Practice Introduction. 1 Credit Hour.

This clinical practice introduction provides the student the opportunity to observe and achieve competencies related to respiratory care procedures in general medical and surgical floors. Introduces students to clinical respiratory care procedures. Topics include: introduction to the clinical affiliate, patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, positive pressure breathing, chest physiotherapy and airway care.

RESC 5042. Critical Care Introduction. 3 Credit Hours.

This clinical observation provides the students the opportunity to observe and achieve competencies related to respiratory care procedures in the adult, pediatric and neonatal critical care units, the diagnostic and pulmonary labs, and other specialty areas. The topics include initiation of mechanical ventilation, patient stabilization and monitoring, measurement and evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, extubation, arterial line samples, arterial puncture, blood gas analysis, and noninvasive monitoring. Prerequisites: RESC 5041.

RESC 6001. Respiratory Care Professional Issues and Trends. 4 Credit Hours.

Current trends and issues relevant to cardiorespiratory care will be explored. Health care delivery systems, management, treatments and technologies, ethical issues in health care, as well as issues related to professional development and practice will be discussed.

RESC 6002. Advanced Respiratory Care Across the Life Span. 4 Credit Hours.

This course will provide students with a holistic view of how respiratory therapists interact with patients of all ages. Principles, practices, theories and therapeutics related to cardiopulmonary health and disease across the neonatal, pediatric, adolescent, adulthood and geriatric periods will be covered. Presenting respiratory care as a continuum will provide students with a unique developmental overview, designed to enhance their didactic and clinical acumen.

RESC 6011. Clinical Seminar 1. 2 Credit Hours.

Case presentations are required to integrate clinical and theory. Review of respiratory care with an emphasis on problem solving and decision making. Practice board credentialing examinations will be administered for national board examinations preparation. Current issues relevant to respiratory care will be explored to include new treatments and technologies, and issues related to professional development and practice. Prerequisite: Second year status.

RESC 6019. Clinical Practice 1. 12 Credit Hours.

This course provides students the opportunity to further develop both basic and advance skills required in the intensive care of the respiratory patient. Topics include: patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, positive pressure breathing, chest physiotherapy, airway care using nasal, endotracheal, tracheal tubes, initiation of mechanical ventilation, patient stabilization and monitoring, evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, endotracheal intubation, extubation, arterial line sampling, arterial puncture, blood gas analysis, and non-invasive monitoring. The students will also complete a pulmonary function, bronchoscopy observation, long-term care, and pediatric rotations. Prerequisite: Satisfactory completion of first year course work.

RESC 6029. Clinical Practice 2. 12 Credit Hours.

This course provides an opportunity to acquire clinical experience in the intensive care of neonatal and pediatric patients. Topics include: patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, chest physiotherapy, airway care, initiation of mechanical ventilation, patient stabilization and monitoring, evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, endotracheal intubation, monitoring (invasive and non-invasive), labor and delivery assistance, and transport. Students are also given the opportunity to further develop their adult critical care skills.

RESC 6030. Research Project 1. 2 Credit Hours.

This course provides the student with guided activities to develop an appropriate research question and research methodology for completion of the required research requirements.

RESC 6031. Research Project 2. 2 Credit Hours.

Guided activities to develop an appropriate research question and research methodology and begin data collection for completion of the required program research requirements. Prerequisite: Second year status.

RESC 6032. Clinical Practice 3. 8 Credit Hours.

This course provides an opportunity to advance the students clinical experience in a specialization area. This includes the adult, neonatal and pediatric intensive care units in the areas of patient assessment and monitoring (invasive and noninvasive), mechanical ventilation, ECMO, airway care, labor and delivery assistance and transport. The specialization area may include diagnostics, education, leadership or research.

RESC 6033. Clinical Seminar 2. 2 Credit Hours.

Case presentations are required to integrate clinical and theory. Emphasis will be placed on decision making and problem-solving as they relate to neonatal and pediatric respiratory care. Current issues relevant to the neonatal and pediatric respiratory care will be discussed. Review of respiratory care will continue as it pertains to the Therapist Multiple Choice and Clinical Simulation credentialing examinations administered by the National Board for Respiratory Care (NBRC). Successful completion of the National Board for Respiratory Care (NBRC) Therapist Multiple Choice Self Assessment examination is required in order to meet course requirements. Prerequisite: Second year status.

RESC 6034. Research Project 3. 2 Credit Hours.

Guided activities to develop an appropriate research question, research methodology, completion of data collection and analysis for completion of the required program research requirements. Prerequisite: Second year status.

RESC 6035. Clinical Seminar 3. 2 Credit Hours.

Case presentations are required to integrate clinical and theory. Emphasis will be placed on decision making and problem-solving as they relate to clinical respiratory care and disease management. Current issues relevant to respiratory care will be discussed ethical issues in health care, smoking cessation, palliative care, and issues related to professional development and practice. Review of respiratory care as it pertains to the credentialing examinations administered by the National Board for Respiratory Care (NBRC) will continue. Successful completion of the National Board for Respiratory Care (NBRC) self-assessment examinations are required in order to meet course requirements.

RESC 6040. Capstone. 3 Credit Hours.

The capstone course this is a focused on a project on current issues in any area of cardiopulmonary sciences, including quality improvement, disease management, clinical critical care, leadership or management or patient education. The project shall focus on the theory, analysis and current practices and issues.