MASTER OF SCIENCE IN RESPIRATORY CARE

Master of Science in Respiratory Care Program 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 six MSRC first-professional degree programs in the country and provides a great opportunity to become a leader in the respiratory care profession.

Options within the Master of Science in Respiratory Care Program

The Master of Science in Respiratory Care (MSRC) offered by UT San Antonio Health Science Center provides two tracks of study: Entry to the Profession and Degree Advancement. The Entry to the Profession Program (http://catalog.uthscsa.edu/schoolofhealthprofessions/respiratorycare/msrc/entry/) provides students with any background the necessary knowledge and skills to become registered respiratory therapists (RRTs). An Early Acceptance Option (http://catalog.uthscsa.edu/schoolofhealthprofessions/respiratorycare/msrc/rceap/) is available for qualified University of Texas San Antonio (UTSA) students to shorten their course of study en route to earning a MSRC degree. The Degree Advancement Program (http://catalog.uthscsa.edu/schoolofhealthprofessions/respiratorycare/msrc/degreeadvancement/) is designed for RRTs with bachelor degrees in any field to obtain their Master of Science in Respiratory Care degree. The Degree Advancement Program can be taken either entirely online or in a face-to-face format.

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.

One of the goals for the Master of Science in Respiratory Care (MSRC) program is to prepare excellent clinicians that will advocate for their patients and make their lives better. In addition, the program provides 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.

The MSRC program will also 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.
- Leadership development in the areas of management, education and research.
- Development of clinical specialists in the following areas: adult, pediatric and neonatal critical care, chronic disease management, cardiopulmonary diagnostics, pulmonary rehabilitation; and asthma education.
- Preparation of future faculty for college and university respiratory care educational programs.
- Development of 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

Computer Requirement

Students are required to purchase a laptop computer from the Health Science Center Computer Store (http://ims.uthscsa.edu/computer_networking/computer_store.aspx) upon matriculation. The cost of the purchase is included in determination of students' financial aid package.

Program Costs

In addition to required tuition and fees (https://www.uthscsa.edu/academics/health-professions/programs/respiratory-care-ms/tuition-fees/), there are costs for textbooks, scrubs, and equipment. Clinical rotations in the curriculum may require that students relocate outside of San Antonio for the duration of the rotations. The expenses associated with these clinical rotations will vary according to individual arrangements for the cost of travel, temporary housing, etc. Students are encouraged to budget for major expenditures that could be associated with these assignments. Detailed information about program costs can be found on the Division of Respiratory Care website.

Background Checks and Drug Screening

Background checks are required prior to matriculation. Any events that occur after the initial background check that might affect the student's status in the program must be reported to the department immediately. Students are required to comply with additional requests for background checks at any time during their course of study.

Students are responsible for the cost of any/all required background checks.

Some medical facilities require students that rotate in their facility to undergo drug screening prior to being awarded temporary privileges. It is the student's responsibility to comply with this screening. It is the student's responsibility to arrange for the screening in a timely fashion so as not to impact their rotation duties.

The student is responsible for any applicable fees associated with drug screening.

Working and Employment While Enrolled as a Respiratory Care Student

Students are encouraged to devote the maximum time possible to their studies while enrolled in the Respiratory Care Program. The curriculum is intense, demanding, time consuming, and requires long hours of class and study time. Any activity that takes time away from a student's efforts within the program is discouraged.

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 services, 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 pharmacoknetics 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, capnogrpahy 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, hemodynamcis, ventilator weaning and discontinuance will be covered.

RESC 3117. Advanced Concepts in Adult Critical Care. 4 Credit Hours.
This course focuses on advanced concepts in adult critical care. Topics include ECMO, LVADs, IABPs, 12 Lead EKGs, and other modalities used to treat critically ill patients.

RESC 3118. Disease and Case Management in Respiratory Care. 4 Credit Hours.
This course focuses on building the foundations needed in pulmonary disease management caring for a patient with chronic pulmonary disease. Topics include evidence-based practices, disease/case management, and patient education.

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, chocardiography, 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 neonates, 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 stalization 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 4113. Specialization in Neonatal and Pediatric Respiratory Care. 4 Credit Hours.
This course focuses on advanced concepts in neonatal and pediatric respiratory care. Topics include ventilation management and oxygenation, specialty gas administration, and treatments based on clinical status.

RESC 4117. Health Care Research: Concepts and Critical Review. 3 Credit Hours.
This course introduces research concepts and the critical review of medical literature to assess quality to create evidence-based practices effectively.

RESC 4118. Respiratory Care Protocols and Clinical Practice Guidelines. 3 Credit Hours.
The course examines the process and development of evidence-based clinical guidelines and care protocols. Topics include developing best practice, clinical efficacy, current research, autonomy, decision-making, cost-effectiveness, and quality assurance.

RESC 4121. Advancing Clinical Practice in Respiratory Care. 4 Credit Hours.
This course focuses on the current trends and issues faced by practicing respiratory therapists, including health care ethics, diversity and inclusion, emerging technologies, and advancing clinical practice.

RESC 4128. Quality Improvement in the Delivery of Health Care. 4 Credit Hours.
The course examines the techniques and strategies used to effectively measure quality for high-level performance, strategic planning, marketing tools, policy process, and team building.

RESC 4140. DAP Capstone. 4 Credit Hours.
This course will allow students to focus on a specialty area of interest to research an issue and propose solutions on topics such as cardiopulmonary respiratory care, leadership, management, case management, research, education, or another particular area of interest. The student will identify and complete a project applying knowledge and skills learned in the program. Projects will be developed in collaboration with faculty and/or community members.

RESC 4191. DAP Independent Study. 2 Credit Hours.
Students will choose an area of interest for growth and professional development by researching, discussion, and/or writing, and/or presenting findings under the direction of a faculty member. This 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 5110. Specialization in Adult Critical Care. 4 Credit Hours.
This course focuses on building a further understanding of airway management, administration of specialty gases, ventilator management, and pharmacologic agents. Topics include preventing-ventilator asynchrony, anticipating care needed based on nutritional status, and preparing prepare for disasters.

RESC 5113. Trends and Issues in Leadership. 3 Credit Hours.
This course focuses theoretical models of leadership and addresses contemporary thoughts on leadership, the role of a health care leader, and application of leadership theories in that role. Topics include moral frameworks for leadership and decision-making as it relates to healthcare management.

RESC 5115. Application of Educational Principles for Health Care Professionals. 3 Credit Hours.
This course focuses on addressing the practical issues health professionals confront as they strive to provide effective patient, family, and staff education. Topics include Education in healthcare; application of learning theories to healthcare practice; determinants of learning; compliance, motivation, and behaviors of the learner; literacy in adult client population; socioeconomic and cultural attributes of the learner; learners with disabilities; instructional methods and materials, and evaluation techniques in healthcare education.

RESC 5117. Introduction to Research Methods & Design for Evidence-based Practice. 3 Credit Hours.
The course focuses on developing research skills for the student to formulate a research question, assess medical literature, and critically review evidence based on study design, research methodologies, and statistical analysis.

RESC 5120. Pulmonary Disease Management and Education. 4 Credit Hours.
This course focuses on the knowledge and skills to be an effective pulmonary disease educator and navigator to improve health care outcomes for respiratory care patients. Focusing on common respiratory diseases developing care plans based on the pathophysiology, diagnosis, and current treatment options.

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 6003. Professional Issues in Healthcare. 1 Credit Hour.
This interdisciplinary course will provide an overview of professional and ethical issues facing allied health professionals. Topics to be discussed include responsibilities of the heath care practitioner, life and death decisions, patient confidentiality, substance abuse, whistle blowing, and informed consent. Ethics in research and other critical issues related to health care problems will be also be addressed. Collaborative activities and simulated cases will be used to enhance discussion among students.

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.

RESC 6101. Trends and issues in Health Care Delivery. 4 Credit Hours.
This course provides an overview of current issues in health care delivery systems, leadership, ethics, disease management, and issues related to professional development and practice.

RESC 6111. Application of Performance Improvement Methodologies. 3 Credit Hours.
This course examines the quality assessment and improvement process. Students will develop skills to collect data and analyze results. The course explores the relationship between measurement and improvement in healthcare settings.

RESC 6130. Research Methods & Design for Evidence-based Practice Project 1. 2 Credit Hours.
This course provides the student with guided activities for the development of a research question(s), review of literature, and proposed methodology for required research requirements. Prerequisites: RESC 5117.

RESC 6131. Research Methods & Design for Evidence-based Practice Project 2. 2 Credit Hours.
Guided activities to assess data collection and research modalities for a developed research question plan for required research requirements. Prerequisites: RESC 6130, RESC 5117.

RESC 6133. Health Care Finance. 2 Credit Hours.
This course examines the role of finance in the healthcare industry, including revenue cycle management, financial planning, and budgeting. The purpose of this class is to assist the student in developing the necessary analytical ability, attitudes, and decision-making skills required of a healthcare manager in a changing environment.

RESC 6134. Research Methods & Design for Evidence-based Practice Project 3. 2 Credit Hours.
Guided activities to apply research modalities for a developed research question, research methodology, completion of data collection, and analysis to complete the required program research requirements. Prerequisites: RESC 6130, RESC 6131, RESC 5117.

RESC 6135. Organizational Behavior in Health Care. 2 Credit Hours.
This course examines the various levels within an organization starting with individual members, departments, and the organization as a whole. Topics include group dynamics, team development, and building effective teams.

RESC 6150. Independent Study. 1-6 Credit Hours.
This course will be arranged through RESC faculty. Topic and mode of study are agreed upon by student and instructor. Semester hours are variable and credit hours will be determined by topic/project and rigor. The course is offered all terms. The course may be repeated for credit when topics vary (1-6 SCH). Graduate student standing and consent of instructor is required. Open for Cross Enrollment on Space Available Basis.

RESC 6301. Advanced Patient Assessment and Care Plan Development. 3 Credit Hours.
Advanced patient evaluation and the design and implementation of evidence-based respiratory care plans will be emphasized. Evidence-based practice and critical diagnostic thinking are reviewed and applied to the review of the medical record, patient interview, physical assessment and evaluation of diagnostic studies. Assessment of oxygenation, ventilation, and arterial blood gases are reviewed. Laboratory studies, imaging studies and ECG monitoring and interpretation are discussed. Pulmonary function testing, diagnostic bronchoscopy and other diagnostic studies are also described. Acute and critical care monitoring, sleep studies and maternal and perinatal/neonatal patient assessment are overviewed. The student will integrate assessment findings in the development and evaluation of care plans for specific disease states and conditions.

RESC 6302. Advanced Critical Care and Ventilatory Support. 3 Credit Hours.
Provides advanced instruction over all phases of adult critical care and continuous mechanical ventilation. Principles of critical-care are reviewed followed by a discussion of respiratory failure to include recognition, causes, and treatment. Principles of mechanical ventilation are then reviewed, and resources provided regarding the operation and features of the major critical care ventilators. An in-depth discussion of the indications for, and implementation of invasive and noninvasive mechanical ventilatory support is provided and patient stabilization and adjustment of ventilatory support is described, to include patient assessment and monitoring. High-frequency ventilation, extracorporeal membrane oxygenation, use of inhaled nitric oxide, and mechanical ventilatory assistance are described and point-of-care ultrasound, as well as other diagnostic and supportive techniques used in the ICU are reviewed. An overview of neonatal and pediatric critical respiratory care is provided, followed by an in-depth discussion of ventilator discontinuance.

RESC 7042. Advanced Clinical Practice. 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.

RESC 7091. Selected Topics in Cardiopulmonary Sciences. 1-9 Credit Hours.
This course is an independent study of topics of current interest in the cardiopulmonary sciences. Includes study of current research and important new developments in specific areas of practice and research. Can be repeated for up to 9 credit hours.

RESC 7097. Research in Cardiopulmonary Sciences. 3-6 Credit Hours.
This course is an independent research in a selected area of cardiopulmonary sciences directed by a faculty member. Can be repeated for up to 6 credit hours.