

RET: RESPIRATORY CARE

Courses	Credit(s)	Contact	Lab
RET 1025. PRINCIPLES OF RESPIRATORY CARE. PRINCIPLES OF RESPIRATORY CARE Prerequisite: Acceptance to Respiratory Care A.S. Degree program. Prerequisite or Corequisite: BSC 2093C Course and laboratory experience designed for beginning respiratory care students. Introduction and working knowledge of state of the art: basic principles of equipment operation and therapeutic objectives for administration of medical gases, humidity, aerosol, therapy modalities and airway management. This course includes learning activity designed to ensure competence in oral communication.	3	3	0
RET 1264. PRINCIPLES OF MECHANICAL VENTILATION. PRINCIPLES OF MECHANICAL VENTILATION Prerequisite: Minimum grade of C in RET 1295, RET 1274L and RET 1450 This course introduces the function of equipment used in continuous and intermittent modes of mechanical ventilation for adult patients (some pediatric and neonatal). Students will explore the indications, contraindications and hazards of invasive and non-invasive ventilation. We will review current approaches to ventilator management, monitoring techniques and weaning strategies.	3	3	0
RET 1274L. RESPIRATORY CARE LAB I. RESPIRATORY CARE LAB I Prerequisite: Minimum grade of C in RET 1485, RET 1025, and RET 2350. This laboratory course is designed to introduce competencies in the areas of diagnostic, therapeutic, and critical thinking. Students will experience competencies through the use of lab activities, simulation and web-based exercises in small groups. The course will explore the indication, contraindications and hazards of medical gas and aerosol therapy. Information gathering and decision making in a clinical setting will be explored through the use of therapy drive protocols and evidence-based medicine. (Special Fee: \$167.00).	2	0	6
RET 1295. RESPIRATORY DISEASE MANAGEMENT. RESPIRATORY DISEASE MANAGEMENT Prerequisite: Minimum grade of C in RET 1485 and RET 1025 This course is an introduction to disease management and clinical problem solving within respiratory care. Students will investigate the cause of cardiopulmonary diseases and the changes to structure & function of the human anatomy. Student will differentiate the etiology, clinical manifestations, pathogenesis, lab data and treatment for acute and chronic cardiopulmonary diseases.	3	3	0
RET 1450. BASIC PHYSIOLOGY MONITORING. BASIC PHYSIOLOGY MONITORING Prerequisite: Minimum grade of C in RET 1485 and RET 1025 Emphasis on basic diagnostic and monitoring principles used in determining clinical evaluation of patients. Cardiopulmonary assessment using electrocardiography, chest roentgenography and lab test.	3	3	0
RET 1485. CARDIOPULMONARY PHYSIOLOGY. CARDIOPULMONARY PHYSIOLOGY Prerequisite: Acceptance to Respiratory Care A.S. Degree program. Course emphasis on the functions of the cardiopulmonary system as it relates to ventilation, regulation of breathing, respirations, gas exchange and delivery. The course introduces common factors effecting oxygen and carbon dioxide transport. An emphasis on the cardiovascular system and cellular respiration compared to the manifestations of disease and blood gas analysis.	3	3	0
RET 1874L. CLINICAL PRACTICE I. CLINICAL PRACTICE I Prerequisite: Minimum grade of C in RET 1025 and RET 1485 Students are assigned to clinical practice observing and delivering acute patient care under supervision of staff respiratory therapist or clinical instructor. Rotations will consist of sleep labs, pulmonary functions, long term facilities and cardiopulmonary rehabilitation (Special Fee: \$67.00).	3	0	12
RET 1875L. CLINICAL PRACTICE II. CLINICAL PRACTICE II Prerequisite: Minimum grades of C in RET 1874L and RET 1450 Student are assigned to clinical practice delivering acute patient care under supervision of staff respiratory therapist or clinical instructor. (Special Fee: \$112.00).	3	0	12
RET 2244. ADVANCED LIFE SUPPORT. ADVANCED LIFE SUPPORT Prerequisite: Minimum grade of C in RET 1264, RET 2447 and RET 2283L The course is designed to emphasize cardiopulmonary management in the critical care unit. The course will offer a comprehensive review of advanced cardiac life support along with special procedures related to cardiopulmonary disease management. We will introduce special procedures using intra-aortic balloon pumps (IABP) and extracorporeal membrane oxygenation (ECMO).	3	3	0
RET 2283L. RESPIRATORY CARE LAB II. RESPIRATORY CARE LAB II Prerequisite: Minimum grade of C in RET 1274L, RET 1450, and RET 1295 This laboratory course is designed to introduce competencies in the areas of diagnostic, advanced therapeutics, and critical care medicine. Students will experience competencies through the use of lab activities, simulation and web-based exercises in small groups. The course will explore the indication, contraindications and hazards of mechanical ventilation and hemodynamic monitoring. Information gathering and decision making in a clinical setting will be explored through the use of therapy drive protocols and evidence-based medicine. (Special Fee \$112.00).	2	0	6
RET 2284L. RESPIRATORY CARE LAB III. RESPIRATORY CARE LAB III Prerequisite: Minimum grade of C in RET 1264, RET 2447 and RET 2283L This laboratory course is designed to introduce competencies in the areas of diagnostic, advanced therapeutics, and critical care medicine. Students will experience competencies through the use of lab activities, simulation and web-based exercises in small groups. The course will explore the indication, contraindications and hazards of mechanical ventilation and hemodynamic monitoring in the neonatal, pediatric and adult patient populations. We will review the role of respiratory therapists and advanced procedures in the intensive care unit. Information gathering and decision making in a clinical setting will be explored through the use of therapy drive protocols and evidence-based medicine. (Special Fee \$58.00).	2	0	6
RET 2350. RESPIRATORY PHARMACOLOGY. RESPIRATORY PHARMACOLOGY Prerequisite: Acceptance to Respiratory Care A.S. Degree program History of pharmacology, regulatory agencies and regulations concerning use of drugs. Drug action, absorption, distribution, and use in human body. Emphasis on respiratory drugs, cardiac drugs and related drugs therapist is exposed to in a hospital.	3	3	0

RET 2447. HEMODYNAMIC MONITORING. 3 3 0	RET 3269. ADVANCED CARDIOPULMONARY CRITICAL CARE. 3 3 0
HEMODYNAMIC MONITORING Prerequisite: Minimum grade of C in RET 1295, RET 1450, and RET 1274L The course is designed to emphasize cardiopulmonary assessment, diagnostic and hemodynamic monitoring equipment. This course offers a comprehensive introduction to the latest advances in technology and trends in non-invasive monitoring technology.	ADVANCED CARDIOPULMONARY CRITICAL CARE Prerequisite: Admission to BS Cardiopulmonary Sciences Program This course will introduce the student to methods, equipment, procedures, and the clinical application of advanced cardiopulmonary critical care interventions, including Extracorporeal Membranous Oxygenation (ECMO), Internal and External Cardiac Assist Devices, Pulmonary Vasodilators, and Heart and Lung Transplant Procedures.
RET 2714. NEONATAL/PEDIATRIC RESPIRATORY CARE. 3 3 0	RET 3287. CARDIOPULMONARY DIAGNOSTICS. 3 3 0
NEONATAL/PEDIATRIC RESPIRATORY CARE Prerequisite: Minimum grade of C in RET 2283L and RET 1264. Instruction includes the following areas: development and physiology of fetal and neonate lung; perinatal circulation; neonatal pulmonary disorders; treatment of perinatal patients with respiratory care techniques and pediatric respiratory therapy. This course will cover fetal development, birth and onset of respirations, assessment of the neonatal and pediatric patient, diagnostic tools, common respiratory disorders and diseases of the neonatal and pediatric patient, respiratory care procedures, commonly used equipment, indications for ventilation, management of the ventilated patient, and modifications in therapeutic procedures, transport, and home care. The NBRC Matrix will be followed for applicable content.	CARDIOPULMONARY DIAGNOSTICS Prerequisite: Admission to the BS Cardiopulmonary Sciences Program. This course is designed to provide students with an understanding of non-invasive cardiopulmonary diagnostic procedures. These primary diagnostic studies include cardiopulmonary exercise testing, non-invasive cardiac and respiratory diagnostics and monitoring, with an emphasis on data analysis and clinical application.
RET 2876L. CLINICAL PRACTICE III. 3 0 12	RET 3354. MEDICAL PHARMACOLOGY. 3 0 3
CLINICAL PRACTICE III Prerequisite: Minimum grades of C in RET 1875L and RET 2283L Student are assigned clinical practice in critical care environments under the supervision of a staff respiratory therapist or clinical instructor. An emphasis on mechanical ventilation including advanced patient care for the adult, pediatric and neonatal population. (Special Fee: \$64.00).	MEDICAL PHARMACOLOGY Prerequisite: Admission to the BS Cardiopulmonary Sciences Program. This course is designed to provide students with a broad understanding of pharmaceutical therapy for acute and chronic illness in patients with cardiopulmonary disease. Topics will include the identification of drug classes, administration techniques, and elimination of the drug by the body, as well as research and development.
RET 2877L. CLINICAL PRACTICE IV. 3 0 12	RET 3444. INTRODUCTION TO LUNG AND CARDIAC ULTRASOUND. 3 3 0
CLINICAL PRACTICE IV Prerequisites: Minimum grades of C in RET 2876L and RET 2284L Students are assigned to clinical practice rotations in critical care environments under the supervision of a staff respiratory therapist. An emphasis on mechanical ventilation and hemodynamic monitoring in the adult, pediatric and neonatal population. (Special Fee: \$110.00).	INTRODUCTION TO LUNG AND CARDIAC ULTRASOUND Prerequisite: Admission to BS Cardiopulmonary Sciences Program This course will introduce students to basic principles and concepts of lung and cardiac ultrasound. The focus will be on the application of ultrasound in cardiopulmonary diagnostics, with an emphasis on evaluation of relevant thoracic anatomy, indications for diagnostic studies, basic interpretation, and clinical application of findings.
RET 2920. RESPIRATORY CARE PRACTICUM. 3 3 0	RET 3536. CARDIOPULMONARY REHABILITATION. 3 3 0
RESPIRATORY CARE PRACTICUM Prerequisite: Minimum grade of C in RET 2244, RET 2714, RET 1875L, and RET 2284L This course will be a collection of sessions dedicated to enhance the student transition into the workforce. The course will reflect on content learned and measure knowledge against the content matrix on the national credentialing examination using simulated mock examinations. Students will develop a professional portfolio that includes a summary of competencies, development of a resume, and complete a professional mock interview. An exploration of a 3, 5, and 10 year goals will include both academic and professional credentialing goal pathways. (Special Fee \$130.00).	CARDIOPULMONARY REHABILITATION Prerequisite: Admission to the BS Cardiopulmonary Sciences Program. This course is designed to provide students with a comprehensive understanding of cardiopulmonary rehabilitation. Students will learn how to optimize the quality of life for chronically ill patients with cardiopulmonary disease through rehabilitation, education and outpatient management.
RET 2930. SELECTED TOPICS IN RESPIRATORY CARE. 1-3 variable	RET 3715. NEONATAL MEDICINE. 3 3 0
SELECTED TOPICS IN RESPIRATORY CARE Prerequisite: Departmental approval. Selected topics in respiratory care based on the needs and areas of interest of the class and the professor. May include laboratory and/or field work as part of the class. Multiple credit course. May be repeated for up to 3 hours of credit, but grade forgiveness cannot be applied.	NEONATAL MEDICINE Prerequisite: Admission to the BS Cardiopulmonary Sciences Program. This course will provide students an overview of fetal and neonatal development and physiology of the cardiopulmonary system. Normal and abnormal physiology, diagnostics, and possible treatment available to the neonatal patient will be discussed. An examination of trends and technology utilized for neonatal care will be researched.

RET 4034. HEALTH CARE DELIVERY AND ACCESS. 3 3 0	RET 4524. COMMUNITY HEALTH AND WELLNESS. 3 3 0
HEALTH CARE DELIVERY AND ACCESS Prerequisite: Admission to the BS Cardiopulmonary Sciences Program or BS Radiologic and Imaging Sciences Program. This course provides an overview of health care delivery as it relates to the management of patient care within acute care facilities, long term care, outpatient centers and home care environments. An overview of the US health care system will be provided, along with an exploration of barriers to health care access and the impact on health status.	COMMUNITY HEALTH AND WELLNESS Prerequisite: Admission into the BS Cardiopulmonary Sciences Program The course will focus on concepts of community health and wellness, with a focus on the implementation of community health interventions. Needs assessment, planning, funding and evaluation of health education and promotion will be covered. Students will develop plans to provide education involving disease management and wellness interventions for acute and chronic cardiopulmonary illness. The principles learned will be applied in RET4940, Community Health Service Learning.
RET 4440C. CARDIAC ULTRASOUND I. 3 2 3	RET 4931. SPECIAL TOPICS IN EVIDENCE-BASED CRITICAL CARE. 2 2 0
CARDIAC ULTRASOUND I Prerequisite: Admission to the BS Cardiopulmonary Sciences program, Non-Invasive Cardiology Track, BS in Radiologic and Imaging Sciences program, Cardiac Ultrasound Track, or ATC in Echocardiography. This course presents an introduction to non-invasive cardiology, including those tests performed for the purpose of the diagnosis and treatment of cardiovascular disease. The course is designed to introduce students to the physics of ultrasound technology, as well as medical sonography where students can apply the use of scanning cardiac circulation, cardiac valves and myocardium. (Special Fee: \$20.00).	SPECIAL TOPICS IN EVIDENCE-BASED CRITICAL CARE Prerequisite: Admission to BS Cardiopulmonary Sciences Program This course will introduce the student to evidence-based practice in critical care. Evidence-based practice is a problem-solving approach to clinical care that incorporates the use of current best evidence from well designed studies, clinician expertise and patient values. Health care that is evidence-based leads to better clinical decisions and improved patient outcomes.
RET 4441C. CARDIAC ULTRASOUND II. 3 2 3	RET 4940. COMMUNITY HEALTH CAPSTONE. 1 1 0
CARDIAC ULTRASOUND II Prerequisite: Admission to the BS Cardiopulmonary Sciences program, Non-Invasive Cardiology Track, BS in Radiologic and Imaging Sciences program, Cardiac Ultrasound Track, or ATC in Echocardiography and RET 4440C with minimum grade of C. This course presents an introduction to specialized non-invasive cardiology, standards of patient care, current and emerging technologies, clinical integration of data, protocols, pathophysiology and therapeutic measures will be emphasized. (Special Fee: \$20.00).	COMMUNITY HEALTH CAPSTONE Prerequisite: Minimum grade of C in RET 4524, HSC 4500, RET 4034 This course is designed to facilitate partnerships between student health professionals and community health organizations to promote, support and deliver quality community health interventions to patients with cardiopulmonary disorders. Students will develop a community health intervention project which will assist and or improve the community health interventions provided by a selected organization.
RET 4443. CARDIAC ULTRASOUND PHYSICS. 2 2 0	RET 4942L. CARDIAC ULTRASOUND CLINICAL PRACTICE I. 2 0 16
CARDIAC ULTRASOUND PHYSICS Prerequisite: Admission to the BS Cardiopulmonary Sciences program, Non-Invasive Cardiology Track, BS in Radiologic and Imaging Sciences program, Cardiac Ultrasound Track, or ATC in Echocardiography. Corequisite: RET 4440C This course is designed to provide students with a comprehensive understanding of cardiac ultrasound Physics from its function to its use in diagnosing cardiac states. Students will learn how to use both the tools of the ultrasound machines to their optimum. They will be also be learning to provide accurate data to the reading cardiologist.	CARDIAC ULTRASOUND CLINICAL PRACTICE I Prerequisite: Admission to BS Cardiopulmonary Sciences Program, Non-Invasive Cardiology Concentration, ATC in Echocardiography or BS Radiologic and Imaging Sciences Program, and RET 4440C with a minimum grade of C. This course provides an introduction to non-invasive cardiac diagnostic modalities in the clinical setting, including observation, pre and post-procedure activities and performance, under supervision, basic echocardiographic examinations, including 2-D mode and Doppler. (Special Fee: \$20.00).
RET 4444. CARDIAC ULTRASOUND III. 3 3 0	RET 4943L. CARDIAC ULTRASOUND CLINICAL PRACTICE II. 2 0 16
CARDIAC ULTRASOUND III Prerequisite: Minimum grades of C in RET 4441C and RET 4942L and admission to the BS in Radiologic and Imaging Sciences Program, Cardiac Ultrasound Track, or ATC in Echocardiography. This course emphasizes the theory and clinical application of tools used in advanced cardiac ultrasound procedures. This includes the clinical integration of data, protocols, pathophysiology and therapeutic measures for specialized echocardiographic techniques such as; TEE, Stress echo, Echo contrast, and congenital echocardiography. There will be an emphasis on indications, contraindications, therapeutic measures, patient safety and well-being.	CARDIAC ULTRASOUND CLINICAL PRACTICE II Prerequisite: Minimum grade of C in RET 4942L and admission into BS Cardiopulmonary Sciences Sciences Program, Non-Invasive Cardiology Track; BS in Radiologic and Imaging Sciences Program, Cardiac Ultrasound track; or ATC in Echocardiography. This course continues the development of skills and concepts begun in Clinical Practice I and provides an introduction to specialized echocardiographic techniques in the clinical setting, including observation, pre and post-procedure activities, and participation in the performance, under supervision, of specialized echocardiographic techniques such as TEE, Stress, contrast and congenital echocardiography. (Special Fee: \$20.00).

RET 4944L. CARDIAC ULTRASOUND CLINICAL PRACTICE III. 3 24 0

CARDIAC ULTRASOUND CLINICAL PRACTICE III Prerequisite: Minimum grade of C in RET 4444 This course will introduce the student to the clinical application of advanced echocardiographic tools used clinically in the hospital setting. Final objective being the performance and use of these tools by the sonographer. Students can expect to spend 360 hours in clinical practice during the semester. (Special Fee: \$20.00).

RET 4950. ADVANCED CRITICAL CARE CAPSTONE. 2 2 0

ADVANCED CRITICAL CARE CAPSTONE Prerequisites: RET 3269, RET 3444, RET 4931 This capstone course will enable students to develop a special critical care project in collaboration with a clinical department or unit or to conduct research to advance their own critical care knowledge. Students will integrate knowledge gained in previous coursework to develop a proposal and complete a project or research paper based upon an area of interest in critical care, with an emphasis on clinical practice or education.