School of Medicine

Degrees Offered

- B.A. in Human Performance and Health
- B.S. in Biomedical Laboratory Diagnostics
- B.S. in Communication Sciences and Disorders
- B.S in Exercise Physiology
- B.S. in Health Informatics and Information Management
- B.S. in Immunology and Medical Microbiology
- B.S.R.T. in Respiratory Therapy

Introduction

The West Virginia University School of Medicine is a part of the Robert C. Byrd Health Sciences Center, a comprehensive academic health system with three campuses in the state, a network of affiliated hospitals and practice plans, and a mission of education, research, clinical care, and service to the state. On the main Morgantown campus, students have access to a full range of research and clinical facilities, including a new laboratory building and a wide range of advanced research centers. West Virginia University Hospitals includes sophisticated medical technology, including magnetic resonance imagery, lithotripsy, and laser surgery; the campus includes a large and busy tertiary hospital, a trauma center, children's hospital, cancer center, a psychiatric hospital, primary care and specialty clinics, a rehabilitation hospital and many other patient care facilities.

The undergraduate degrees in the School of Medicine are in the Health Professions division of the school. At the undergraduate level, BS degrees are offered in Biomedical Laboratory Diagnostics, with tracks in Medical Laboratory Science and Histotechnology; Communication Sciences and Disorders; Exercise Physiology; Health Informatics and Information Management; and Immunology and Medical Microbiology. A BSRT degree is offered in Respiratory Therapy. Minors are also offered in Communication Sciences; Disability Studies; Healthcare Data Analytics; Molecular Medicine; Performing Arts Medicine; and Rural Appalachian Health Disparities. The undergraduate experience is enhanced by the academic health sciences environment as described above and in most cases involves practical work in a health care setting in addition to classroom and laboratory experiences. Many students also have the opportunity to pursue undergraduate research experiences.

The undergraduate degree programs in the School of Medicine are enhanced by the presence of robust biomedical sciences graduate programs and other graduate and professional programs, including the MD degree program. The Health Professions division offers the following Master's degrees: Athletic Training (MS); Exercise Physiology (MS); Medical Laboratory Science (MS); Occupational Therapy (MOT); Pathologists' Assistant (MHS); Physician Assistant Studies (MHS); and Speech-Language Pathology (MS). The division also offers the following doctoral degrees: Audiology (AuD); Occupational Therapy (OTD); Pathophysiology, Rehabilitation, and Performance (PhD); and Physical Therapy (DPT).

Undergraduate students may choose to enter the workforce or to continue their study in a graduate or professional program. These programs often have competitive admission requirements for which the undergraduate degree programs provide an excellent foundation.

ADMINISTRATION

DEAN

- Clay Marsh - MD (West Virginia University School of Medicine)

VICE DEAN-MEDICAL EDUCATION/ACADEMIC AFFAIRS

- Norman D. Ferrari III - MD (West Virginia University School of Medicine)
  Chief Academic Officer for Physician Education

VICE DEAN FOR HEALTH PROFESSIONS

- MaryBeth Mandich - PhD (West Virginia University)

VICE DEAN FOR CLINICAL SERVICES & CMO, WVU HEALTHCARE

- Michael Edmond - MD (West Virginia University School of Medicine), MPH

ASSOCIATE DEANS

- Scott A. Cottrell - EdD (West Virginia University, College of Education & Human Services)
  Student Services & Curriculum, Medical Education
- Julie Green
  Faculty & Practice Plan Affairs
- James P. Griffith - MD (West Virginia University School of Medicine)

Charleston Campus Student Services

- Stephen Hoffmann - MD (University of Cincinnati)
  Clinical Programs
- Rosemarie Cannarella Lorenzetti - MD (West Virginia University School of Medicine)
  Eastern Campus Student Services
- Kathy Moffett - MD (West Virginia University School of Medicine)
  Faculty Services
- Linda Nield - MD (Dartmouth School of Medicine)
  MD Degree Admissions
- Becky Stauffer - CPA
  Finance & Chief Administrative Officer
- Manuel Vallejo - MD, DMD (West Virginia University School of Medicine)
  Graduate Medical Education and DIO

ASSISTANT DEANS

- Melanie Fisher - MD (Pennsylvania State University)
  Continuing Medical Education
- Azalea Hulbert - PhD (Pennsylvania State University)
  Academic and Student Affairs, Health Professions
- Dorian Williams - MD (West Virginia University School of Medicine)
  Technology & Simulation

ASSOCIATE VICE PRESIDENT FOR HEALTH SCIENCE

- John Linton - PhD (Kent State University)
  Dean, Charleston Campus
- Richard Thomas - MD (West Virginia University School of Medicine)
  Dean, Eastern Campus

Accelerated Programs

MOUNTAINEER ACCELERATED PATHWAY (MAP) TO MD

The WVU Mountaineer Accelerated Pathway (MAP) to the Medical Degree (MD) Program helps provide students with a flexible pathway to earn a medical degree at the West Virginia University School of Medicine. MAP is for academically talented and highly motivated high school students from West Virginia and high school dependents of WVU and WVU Medicine employees.

Selected students must attend WVU and choose an undergraduate major in the WVU School of Medicine Health Sciences Center. Participants are responsible for undergraduate tuition and fees. Once in MAP, students must submit an application through AMCAS to apply to medical school. This program guarantees an interview if the MAP requirements are met. **Acceptance to the MD program is not guaranteed.**

If accepted, Medical school tuition will be supported with an annual scholarship of at least $10,000 a year or higher provided the student remains in good academic and professional standing.

Please visit the Mountaineer Accelerated Pathway's website (https://medicine.hsc.wvu.edu/md-admissions/programs/wvu-mountaineer-accelerated-pathway-map-to-md/) for more information.

B.S. EXERCISE PHYSIOLOGY AND M.S. ATHLETIC TRAINING

Please visit the B.S. Exercise Physiology or M.S. Athletic Training catalog page for additional information.

B.S. EXERCISE PHYSIOLOGY AND D.P.T. PHYSICAL THERAPY

Please visit the B.S. Exercise Physiology or D.P.T. Physical Therapy catalog page for additional information.

B.S. HEALTH INFORMATICS AND INFORMATION MANAGEMENT AND M.H.A. HEALTH ADMINISTRATION

Please visit the B.S. Health Informatics and Information Management or M.H.A. Health Administration catalog page for additional information.

B.S. IMMUNOLOGY AND MEDICAL MICROBIOLOGY AND M.S. MEDICAL LABORATORY SCIENCE

Please visit the B.S. Immunology and Medical Microbiology or M.S. Medical Laboratory Science catalog page for additional information.

B.S. IMMUNOLOGY AND MEDICAL MICROBIOLOGY AND M.P.H. PUBLIC HEALTH

Please visit the B.S. Immunology and Medical Microbiology or M.P.H. Public Health catalog page for additional information.

Major Learning Outcomes

BACHELOR OF SCIENCE (BS) IN BIOMEDICAL LABORATORY DIAGNOSTICS

Upon graduation, students will:

- Demonstrate entry level knowledge for a laboratory medicine professional.
- Perform accurate and reliable qualitative and quantitative test procedures using sophisticated instrumentation.
- Model the professional traits of a laboratory medicine practitioner in a workplace setting (e.g., during clinical rotations).
- Communicate effectively in written and oral forms appropriate to a laboratory medicine professional.

BACHELOR OF SCIENCE (BS) IN COMMUNICATION SCIENCES AND DISORDERS

The Department of Communication Sciences and Disorders is committed to the preparation of students interested in working with individuals with communication disorders. Upon completion of the Bachelor of Science in Communication Sciences and Disorders at West Virginia University, the student will be able to:

- Explain acoustic, psychoacoustic, and neurological principles of speech, language, and hearing as they relate to the anatomy of the speech, language, and hearing systems.
- Transcribe and analyze speech, language, and hearing across the lifespan to classify capabilities as typical or atypical.
- Identify basic concepts related to evaluation and treatment of communication and swallowing disorders during clinical observations.
- Communicate information regarding communication disorders in oral and written format while incorporating principles of evidence-based practice.

BACHELOR OF SCIENCE (BS) IN EXERCISE PHYSIOLOGY

The Bachelor of Science program in exercise physiology is a preparatory program for graduate or professional school in areas such as exercise physiology, physical therapy, or medicine. The undergraduate program includes courses in science, anatomy, physiology, nutrition, and business, and hands-on laboratories in exercise physiology, and exercise instruction. Students will also complete a 180 hr. clinical internship or research in their senior year. Select senior students can take a hands-on cadaver dissection gross anatomy laboratory to further enhance their ability to compete for admission to Physician Assistant, Physical Therapy, Medicine or other Rehabilitative Science graduate programs.

Students will be able to:

- Critically evaluate scientific information and apply to exercise physiology related concepts.
- Integrate foundational science coursework and its application in exercise physiology.
- Use critical reasoning and evidence to methodically and systematically problem solve and develop interventions in exercise physiology.
- Perform and clinically apply health and fitness screening as well as exercise testing and prescription for healthy and chronic disease populations.
- Perform laboratory techniques, analysis and interpretation of data, and application to practice within the discipline.
- Apply professional competencies to discipline related practice, including effectively communicating scientific and clinical information to lay audiences.

BACHELOR OF SCIENCE (BS) IN HEALTH INFORMATICS AND INFORMATION MANAGEMENT

Students completing the degree will be able to:

Data Structure, Content, and Information Governance

- Ensure data integrity, privacy, and security of health record content.

Information Protection: Access, Disclosure, Archival, Privacy and Security

- Recommend privacy and security strategies for health information.

Informatics, Analytics, and Data Use

- Conduct research and perform data analysis on healthcare issues.
- Present findings using data visualization for decision-making.

Revenue Cycle Management

- Code health records using ICD-10-CM, ICD-10-PCS, and CPT classifications in accordance with official guidelines and policies.
- Verify that documentation in the health record supports the diagnosis and reflects the patient's prognosis, clinical findings, and discharge status.
- Evaluate revenue cycle processes and reimbursement methodologies.

Health Law and Compliance

- Comply with healthcare legal processes, policy, and compliance, using an ethical perspective.
- Analyze components of risk management, quality improvement, and health policy.

Organizational Management and Leadership

- Oversee fundamental and change leadership activities, such as performance improvement, financial processes, training needs, and project management.

Professional Preparedness

- Engage in 400 hours of unique, customized, professional practice experience.
- Create a professional portfolio.

BACHELOR OF SCIENCE (BS) IN IMMUNOLOGY AND MEDICAL MICROBIOLOGY

The Bachelor of Science degree in Immunology and Medical Microbiology will prepare students from diverse backgrounds to serve as professionals that are knowledgeable about the immune system of humans and other mammals, how the immune system functions, and the consequences of its malfunction on the health of the host. Knowledge of the immune system will be fully integrated with an excellent understanding of the diversity of microorganisms that cause disease in humans and other mammals and mechanisms of disease pathogenesis. Graduates will possess the laboratory skills and knowledge needed to assess the functional status of the immune system and to safely cultivate and identify microorganisms that cause disease in mammals. Graduates will be qualified to pursue several professional career paths in private industry, state and federal government, and academic institutions. The degree can also provide a strong foundation to progress to advanced studies including medical school, dental school, and graduate school.

Students will:

- Summarize and apply the basic concepts of microbiology and microbial pathogenesis.
- Summarize and apply the basic concepts of immunology and immunological disorders.
- Demonstrate expertise in the laboratory skills and knowledge needed to assess the functional status of the immune system.
- Demonstrate expertise in the laboratory skills and knowledge needed to safely cultivate and identify microorganisms that cause disease in mammals.
- Critically interpret microbiological and immunological assay data.
- Discuss, critique, and interpret primary literature in microbiology, microbial pathogenesis, and immunology.
- Demonstrate oral, written, and visual communication skills that result in clear and organized dissemination of material at a level appropriate for the audience.

BACHELOR OF SCIENCE IN RESPIRATORY THERAPY (BSRT)

The program in respiratory therapy will prepare graduates who:

- Deliver high quality respiratory therapy services to individuals and across a continuum of care and in a variety of settings.
- Demonstrate the ability to make evidence-based clinical decisions utilizing information literacy, critical thinking skills, and scientific evidence.
- Collaborate as members of interprofessional teams.
- Provide care that is characterized by cultural respect.
- Demonstrate competence in the recall, application, and analysis of respiratory therapy in all aspects of care and practice.
- Practice respiratory therapy in accordance with recognized professional and ethical standards.

School of Medicine Minors

- Communication Sciences (http://catalog.wvu.edu/undergraduate/minors/communication_sciences/)
- Disability Studies (http://catalog.wvu.edu/undergraduate/minors/disability_studies/)
- Healthcare Data Analytics (http://catalog.wvu.edu/undergraduate/minors/healthcare_data_analytics/)
- Molecular Medicine (http://catalog.wvu.edu/undergraduate/minors/molecular_medicine/)
- Performing Arts Medicine (http://catalog.wvu.edu/undergraduate/minors/performing_arts_medicine/)
- Rural Appalachian Health Disparities (http://catalog.wvu.edu/undergraduate/minors/rural_app_health_disparities/)

Accreditation

BIOMEDICAL LABORATORY DIAGNOSTICS

The WVU Biomedical Laboratory Diagnostics tracks in Medical Laboratory Science and Histotechnology are accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119, and (773) 714-8880. Graduates of the Medical Laboratory Science and Histotechnology programs are eligible for certification by the Board of Certification of the American Society for Clinical Pathology (ASCP).

EXERCISE PHYSIOLOGY

The Bachelor of Science and Master of Science (Clinical) programs in Exercise Physiology are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

HEALTH INFORMATICS AND INFORMATION MANAGEMENT

The Health Information Management accreditor of West Virginia University is the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). The College's accreditation for Baccalaureate degree in Health Informatics and Information Management has been reaffirmed through 2029-2030. All inquiries about the program's accreditation status should be directed by mail to CAHIIM, 200 East Randolph Street, Suite 5100, Chicago, IL, 60601; by phone at (312) 235-3255; or by email at info@cahiim.org.

RESPIRATORY THERAPY

The Bachelor of Science in Respiratory Therapy Program at West Virginia University, (CoARC program # 200661-BSRT Degree) located at 64 Medical Center Drive, Morgantown, WV 26506 holds Provisional Accreditation from the Commission on Accreditation for Respiratory Care (www.CoARC.com). This status signifies that a program with an Approval of Intent has demonstrated sufficient compliance with the Standards (through submission of an acceptable Provisional Accreditation Self Study Report (PSSR) and any other documentation required by the CoARC, as well as satisfactory completion of an initial on-site visit), to be allowed to admit students. It is recognized as an accredited program by the National Board for Respiratory Care (NBRC), which provides enrolled students who complete the program with eligibility for the Respiratory Care Credentialing Examination(s). The program will remain on Provisional Accreditation until it achieves Continuing Accreditation.

RESPIRATORY THERAPY

RT 301. An Introduction to Respiratory Therapy. 4 Hours.
This course introduces the science of respiratory therapy medicine. Topics to be explored include the history of respiratory medicine, what is respiratory therapy, acute, non-acute, and atypical areas of RT practice, obtaining a patient history, performing inspection and clinical assessment techniques, medical ethic theories, outpatient diagnostics, vaping/smokeless cessation strategies, RT therapeutics, and maximizing skills to achieve optimal patient outcomes.

RT 310. Respiratory Therapy Equipment, Procedures, and Processes. 3 Hours.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This course will introduce students to all aspects, types, and forms of equipment utilized within respiratory therapy. A concentration of the assembly, operation, application, principles, theories, processes, and procedures of respiratory therapy equipment will be comprehensively explored.

RT 311. Respiratory Therapy Equipment, Procedures, and Processes Lab. 1 Hour.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This course will provide valuable hands-on instruction and require students to master the set-up, initiation, operation, maintenance, modification, management, and discontinuation of respiratory therapy equipment, procedures, and processes utilized within the profession of respiratory therapy. Numerous topics will be explored including medical gases, therapeutics, patient monitoring and assessment, artificial airways, intubation/extubation, non-invasive positive pressure ventilation, high flow oxygen and others.

RT 320. Respiratory Therapy Cardiopulmonary Anatomy and Physiology. 3 Hours.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This course provides students a comprehensive overview of the anatomy and physiology of the cardiopulmonary system. Numerous topics will be explored including the respiratory system, ventilation dynamics, pulmonary function assessment/techniques, diffusion, gas laws, circulatory system, oxygen transport, acid base balance, ventilation perfusion relationships, and neurological control of ventilation. Respiratory therapy case study applications will be integrated into the course.

RT 340. Pharmacology Fundamentals in Respiratory Therapy. 3 Hours.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This course will explore the dynamic principles, theories, categories, applications, and actions of respiratory therapy pharmacology. Students will examine the phases of drug action including pharmacokinetics, pharmacodynamics, and pharmacogenetics. The dosage, delivery, methods of action, indications, contraindications, modifications, and hazards of respiratory therapy and critical care medications will be discussed.

RT 350. PFTs, Sleep, and RT Alternative Settings. 3 Hours.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This course will explore alternative settings and procedures of respiratory therapy practice. Students will be introduced to the areas of pulmonary function testing, polysomnography (sleep medicine), home care, pulmonary rehabilitation, hyperbaric oxygenation, bronchoscopies and additional alternative procedures and settings utilized within respiratory therapy.

RT 360. Patient Assessment and Therapeutic Procedures in Respiratory Therapy. 3 Hours.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course examines the vital topics of effective patient assessment and common therapeutic procedures and interventions utilized within respiratory therapy. The course explores evaluating data obtained from the inspection, palpation, percussion, and auscultation of patients, interviewing, and educating the patient and family, analyzing patient information, and modifying treatment plans, medical gas therapy, and various respiratory therapeutics processes and procedures.

RT 370. Neonatal and Pediatric Diseases and Therapeutics in Respiratory Therapy. 3 Hours.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course provides an intriguing and comprehensive exploration of diseases, concepts, theories, procedures, and therapeutics found in neonatal and pediatric respiratory therapy. Students will extensively critique and analyze neonatal and pediatric anatomical, pathophysiological, and disease processes. The course examines gestational development, fetal gas exchange/circulation, fetal assessment, difficult neonatal deliveries, prematurity, neonatal/pediatric resuscitation, congenital malformations, and neonatal and pediatric therapeutics.

RT 371. Neonatal and Pediatric Laboratory Exercises and Interventions in Respiratory Therapy. 1 Hour.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course will provide students hands-on activities to explore, assemble, initiate, operate, investigate, modify, and demonstrate competencies with common procedures encountered in neonatal and pediatric respiratory therapy. Students will also develop mastery of a detailed and comprehensive methodology to analyze, evaluate, and demonstrate timely and accurate neonatal and pediatric resuscitation interventions.

RT 378. Respiratory Therapy Clinical Practicum 1 (An Introduction to Clinical Practice). 1 Hour.
PR: Admission into the Professional Phase of the Respiratory Therapy Program. This clinical practicum course introduces the student to the clinical environment and targets basic patient respiratory interventions, care, and therapeutics. Students will complete CPR certification at the onset of the course and prior to entering the general patient care clinical environment at an approved off-campus clinical facility.

RT 380. Mechanical Ventilation Foundations. 3 Hours.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course provides an extensive overview of basic mechanical ventilation concepts and theories encountered within respiratory therapy. Numerous philosophies are explored including the indications, contraindications, initial and modification of settings, set-up process, alarm parameters, discontinuation, complications, pneumatic principles, non-invasive positive pressure ventilation, and pathophysiological effects of the mechanically controlled patient. Basic strategies to maximize mechanically ventilated patient outcomes are explored.

RT 381. Mechanical Ventilation Laboratory Exercises and Applications in Respiratory Therapy. 1 Hour.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course will provide students hands-on activities to explore, assemble, initiate, operate, investigate, modify and demonstrate competencies with mechanical ventilation procedures encountered in respiratory therapy. Adult, neonatal, high frequency, non-invasive and atypical ventilatory activities and monitoring will be explored in detail.

RT 388. Respiratory Therapy Clinical Practicum 2. 4 Hours.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This clinical practicum course integrates hands on respiratory therapy patient management, diagnostic procedures, therapeutics, education of patients and family, and complete respiratory therapy in basic and high-risk scenarios and activities. This course expands student exposure in the general patient care setting and introduces various specialty areas of respiratory therapy practice including home care, sleep medicine, outpatient diagnostics, and others.

RT 389. Cardiopulmonary Disease Pathophysiology. 3 Hours.
PR: RT 301 and RT 310 and RT 311 and RT 320 and RT 340 and RT 350 and RT 378 with a minimum grade of C in each. This course explores the etiology, pathology, pathogenesis, pathophysiology, clinical manifestations, monitoring, diagnosis, and treatment of cardiopulmonary related diseases/disorders. This course examines asthma, chronic bronchitis, respiratory failure, emphysema, ARDS, CHF, lung cancer, neuromuscular disorders, sleep apnea, cystic fibrosis, pulmonary hypertension, post-surgical patients, pneumonia, atelectasis, drug/alcohol overdoses, pulmonary embolism, neurologic, trauma, infectious diseases, shock, sepsis, burn/inhalation injury, bariatrics, and traumatic brain injury.

RT 393. Special Topics. 1-6 Hours.
PR: Consent. Investigation of topics not covered in regularly scheduled courses.

RT 400. Hemodynamic and Intensive Care Principles and Practices. 3 Hours.
PR: RT 360 and RT 370 and RT 371 and RT 380 and RT 381 and RT 388 and RT 389 with a minimum grade of C in each. This course provides a comprehensive examination into concepts, theories, and procedures utilized by the respiratory therapist to optimally manage the critically ill patient. Topics covered include hemodynamic applications/philosophies, invasive lines/drains, neurological considerations, difficult airways, patient assessment, chest tubes, fluid balance, skin integrity, high flow oxygen delivery, EKG's, apnea testing and monitoring, BP assessment, heart rhythm/sounds, bronchoscopies, and emergency interventions.

RT 401. Senior Respiratory Therapy Capstone. 2 Hours.
PR: RT 400 and RT 420 and RT 436 and RT 478 and RT 497 with a minimum grade of C in each. This course focuses on displaying mastery of knowledge, skills, and professionalism acquired by the senior respiratory therapy student. Students will complete three senior style projects which include oral, written, and portfolio development skills. Students will complete a senior research project, portfolio compilation, and extensive project creating a blueprint to prepare for the National Board for Respiratory Care credentialing exams.

RT 420. Advanced Application and Theories in Mechanical Ventilation. 3 Hours.
PR: RT 360 and RT 370 and RT 371 and RT 380 and RT 381 and RT 388 and RT 389 with a minimum grade of C in each. The application of mechanical ventilation concepts, theories and principles is among the most important responsibilities for respiratory therapists to master for their patients. This course will present an immersive experience which serves to prepare, examine, and synthesize advanced analytical theories and applications of mechanical ventilation. This course presents innovative interventions and strategies to maximize patient outcomes receiving mechanical ventilation support.

RT 430. Interdisciplinary Science, Leadership, Management, and Education in Respiratory Therapy. 3 Hours.
PR: RT 400 and RT 420 and RT 436 and RT 478 and RT 497 with a minimum grade of C in each. This course examines theories and concepts promoting the advancement and optimization of the respiratory therapy professional. Areas to be covered include interdisciplinary science, leadership roles, management strategies, respiratory education and evidence-based practice.

RT 436. Comprehensive Board Preparation and Review 1. 3 Hours.
PR: RT 360 and RT 370 and RT 371 and RT 380 and RT 381 and RT 388 and RT 389 with a minimum grade of C in each. This course is the first in a two-part series which targets preparation of students for successful mastery on the National Board for Respiratory Care TMC, CSE, and Specialty credentialization examinations. Topics reviewed include medical gases, humidity/aerosols, assessment of the cardiopulmonary patient, airway management, hyperinflation therapeutics, bronchial hygiene, ABG's, pharmacology, home care, RT equipment, infection control, formulas/calculations, and disease pathology.

RT 460. Interpretation and Assessment of Labs, Tests, and Diagnostic imagery. 3 Hours.
PR: RT 400 and RT 420 and RT 436 and RT 478 and RT 497 with a minimum grade of C in each. The assessment of patients can be greatly augmented by data obtained from medical procedures. This course provides an in-depth view of the vast area of medical laboratory values, testing processes, and diagnostic imagery assessment procedures utilized in respiratory therapy. The identification of normal/abnormal results will be explored and how this information can support a differential diagnosis and optimal patient management.

RT 466. Comprehensive Board Preparation and Review 2. 3 Hours.
PR: RT 400 and RT 420 and RT 436 and RT 478 and RT 497 with a minimum grade of C in each. This course is the second in a two-part series which targets preparation of students for successful mastery on the National Board for Respiratory Care TMC, CSE, and Specialty credentialization examinations. Topics reviewed include test taking methodologies/strategies, special respiratory care procedures, emergency respiratory interventions/procedures, cardiac and hemodynamic monitoring, neonatal/pediatrics, pulmonary function testing, respiratory ethical considerations, formulas/calculations and ventilator management.

RT 478. Respiratory Therapy Advanced Clinical Practicum 3. 6 Hours.
PR: RT 360 and RT 370 and RT 371 and RT 380 and RT 381 and RT 388 and RT 389 with a minimum grade of C in each. This clinical practicum course will initiate student exposure to the vital critical care arenas of respiratory therapy practice. A targeted focus will explore the management of the adult mechanically ventilated patient. This course will optimize student critical thinking and problem solving in the adult critical care environment. This course provides students with advanced clinical experience at approved off-campus clinical facilities.

RT 488. Respiratory Therapy Advanced Clinical Practicum 4. 6 Hours.
PR: RT 400 and RT 420 and RT 436 and RT 478 and RT 497 with a minimum grade of C in each. This clinical practicum course continues building critical care knowledge, skills, and experience and expands exposure into the neonatal/pediatric intensive care forum. Student will master critical thinking and problem solving and will expand their versatility of training by participating, managing, and optimizing neonatal and high-risk emergency scenarios. Students will complete advanced clinical experience at approved off-campus clinical facilities.

RT 497. Research. 1-6 Hours.
Independent research projects.