

# Respiratory Therapy (RESP)

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## **RESP 1010. Introduction to Respiratory Therapy. 2 Hours.**

Online only course. Introduces respiratory care profession, including professional organizations, credentialing, and licensing agencies. Also provides an overview of medical ethics, medicolegal issues of health care, regulations such as HIPPA, and selected OSHA standards, as well as an introduction to medical terminology and patient-care documentation. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Recognize basic information regarding the hospital environment and respiratory care profession; 2. Identify and describe the basic anatomy and physiology of the cardiopulmonary system; 3. Explain basic patient assessment techniques; 4. Summarize basic ethical and legal implications relating to respiratory care practices; 5. Define medical terminology relevant to the respiratory therapy career field. SP.

## **RESP 2020. Cardiopulmonary Anatomy and Physiology. 3 Hours.**

First semester course. Expands on basic human anatomy and physiology, concentrating on the cardiopulmonary system. Covers selected gas laws and physical principles associated with respiration and gas exchange, ventilation, pulmonary mechanics, circulation, and hemodynamics. Introduces fetal and newborn anatomy and physiology and basic cardiac and renal function. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Describe and define the function of the anatomic and histologic structures of the pulmonary system. 2. Describe the physiology of ventilation, including the associated muscles, gas laws, minute volumes and airway, lung, and chest wall dynamics. 3. Describe normal and abnormal breathing patterns. 4. Define and describe diffusion of gases into and from the lungs, including associated gas laws. 5. Describe and define the function of the anatomic and histologic functions of the cardiovascular system. 6. Define oxygen transport and discuss all factors associated with abnormal delivery of oxygen to the tissues. 7. Define acid-base balance and be able to appropriately interpret a blood gas. 8. Describe V/Q relationships and describe clinical implications of V/Q imbalances and their associated pathologies. 9. Describe the physiologic mechanisms of ventilatory control (neurologic and chemical, central and peripheral). Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

## **RESP 2030. Introduction to Pathophysiology. 3 Hours.**

First semester course. Introduction to human diseases, injuries, conditions, and disorders. Review of the hematologic, gastrointestinal, musculoskeletal, integumentary, endocrine, urinary, neurological, cardiac, and pulmonary systems, including fluid and electrolyte and acid-base balance. Integration of general pathologies as they relate to the scope of respiratory therapy practice. Pathologies associated with genetic traits or abnormalities and carcinogenesis are also covered, as are specific clinical application of respiratory care diagnostics. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Identify the fluid compartments of the body and describe how intracellular and extracellular edema may occur. 2. Describe and define normal blood cells (RBCs, WBCs, and platelets), their functions and normal [laboratory] values. Define Leukemia, lymphoma, and multiple myeloma. 3. Define immunity (innate v. adaptive), inflammation, and hypersensitivities. 4. Describe the infectious process, types of infections and microbes, and terminology associated with infections and infectivity. 5. Describe alterations in neurologic function (i.e. levels of consciousness, seizures, brain death v. cerebral death, cognitive disorders, increased intracranial pressure. 6. Define and describe brain injuries (focal v. diffuse, concussion, coup-contrecoup, intra and extradural hematomas), strokes, aneurysms, infections [meningitis], degenerative diseases [Parkinson's, MS, ALS, Guillain-Barre]. 7. Describe endocrine disorders (i.e. forms of Diabetes, thyroid disorders, Cushingism, ). 8. Describe and define GI disorders (i.e. ulcers, ulcerative colitis and Crohn's disease, hepatitis, cirrhosis, diverticulosis, cholecystitis, pancreatitis). 9. Describe muscle and bone disorders (i.e. fractures, osteoporosis, osteomalacia, osteomyelitis, osteoarthritis and rheumatoid arthritis, gout, kyphoscoliosis, muscular dystrophies). 10. Describe the causes and types of renal failure and the associated signs and symptoms. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

## **RESP 2040. Respiratory Care Therapeutics I. 3 Hours.**

First semester course. Theory and clinical applications of a wide range of respiratory therapy modalities, including medical gases (including cylinders, regulators, flow metering devices, and liquid oxygen), aerosols, humidity, hyperinflation techniques, chest physiotherapy, and airway clearance techniques. Clinical Practice Guidelines [CPGs] are introduced, and students must master clinical indications, contraindications, side-effects, and desired therapeutic outcomes. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Relate physical principles to physiology, pathophysiology, and respiratory therapeutics. 2. Summarize the medical gases used by respiratory therapists including gas safety, storage, transport, and administration. 3. Discuss the clinical application of humidity and aerosol therapy and the steps for the proper setup and evaluation of related equipment. 4. Compare and contrast pulmonary clearance and hyperinflation therapies and describe the correct way to administer these therapies. 5. Explain the clinical indications, contra-indications, side-effects, and desired outcomes of the above therapies. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 2041. Laboratory Practice/Therapeutics I. 2 Hours.**

First semester course. Introduction to patient care, including body mechanics, patient interactions, and documentation. Practice in the selection, use, and trouble-shooting of equipment associated with providing medical gases, aerosol and humidity, hyperinflation techniques, IPPB, and airway clearance. Introduction to respiratory pharmacology and devices used to administer and monitor aerosolized medications. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Complete a patient assessment using a methodical approach and effective communication techniques. 2. Identify pathologies and disease processes using information obtained from a patient assessment. 3. Recommend therapeutic treatment options or diagnostic tests based on patient assessment and provide education to a patient on recommendation(s). 4. Describe the clinical indications, contraindications, side effects, and goals of selected respiratory therapy procedures. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 2060. Patient Assessment. 2 Hours.**

First semester course. Introduction to basic patient assessment techniques, including physical assessment and integration of laboratory and diagnostic findings associated with specific diagnoses. Covers physical findings; radiologic findings and other imaging studies; laboratory tests such electrolytes, bacteriology, hematology, and metabolic studies; acid-base balance and blood gas analysis; basic pulmonary function; and hemodynamic values. Emphasis is on the integration of patient presentation and associated pathology. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Describe the elements of patient interview and physical examination of a patient (i.e. vital signs, breath sounds and respiratory patterns, chest assessment [palpation, percussion, inspection], cough and sputum, abnormal extremity findings [edema, clubbing, cyanosis, venous distention]) and the physiologic basis for these findings and/or symptoms; (PLO 1-3) 2. Appropriately interpret arterial blood gas values and associated causes of blood-gas abnormalities; (PLO 1, 4) 3. Describe oxygenation and basic cardiovascular assessment including ECGs, selected dysrhythmias, CVP, and PCWP; (PLO 1, 4) 4. Recognize the significance and normal values of diagnostic and laboratory tests (PLO 1, 4) 5. Describe imaging techniques utilized for chest assessment, and be able to interpret the significance and clinical manifestations of various abnormal chest imaging findings (PLO 1, 4) 6. Understand and describe the process of developing and utilizing Therapist-Driven Protocols [TDPs] and Clinical Practice Guidelines [CPGs]; (PLO 1, 4) Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 2065. Cardiopulmonary Pathophysiology. 3 Hours.**

Second semester course. Expands on RESP 2030 with an emphasis on cardiopulmonary and renal injuries, diseases, disorders, and conditions, using a case-based method that integrates the etiology, presentation, pathophysiology, diagnosis, treatment, and prognosis of cardiopulmonary, hemodynamic, and renal dysfunction. Also explores neonatal and pediatric pathologies of the renal and cardiopulmonary systems, including congenital and structural defects. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Describe cardiovascular diseases (i.e. atherosclerosis, CHD, hypertension, orthostatic hypotension, right- and left-sided heart failure). 2. Describe and define pulmonary disorders, including COPD, CF, pneumonia, croup, epiglottitis, bronchiolitis [RSV], pulmonary edema, pulmonary embolism, interstitial lung disease, neuromuscular disorders affecting breathing, ARDS, IRDS, respiratory failure, lung cancer, atelectasis, sleep apnea, near-drowning, smoke inhalation, traumatic chest injuries, and disorders of the pleura and chest wall. 3. Describe the physical findings and manifestations of the disorders listed above. 4. Describe diagnosis, appropriate therapy and prognosis of the above disorders. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SP.

**RESP 2070. Respiratory Care Therapeutics II. 3 Hours.**

Second semester course. Provides theory and clinical applications of respiratory therapy modalities, including airway management (intubation, extubation, tracheostomy care); manual ventilation; introduction to concepts of artificial ventilation (CPAP, BiPAP, positive and negative pressure ventilators); blood gas sampling, analysis, and quality control; noninvasive monitoring (oximetry, capnography, pulmonary mechanics); and equipment decontamination. Associated CPGs are introduced. Mastery of the clinical indications, contraindications, side-effects, and desired outcomes of therapies is required. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Describe the indications, contraindications, side-effects, goals, and procedures of patient monitoring, blood gas sampling, artificial airway management, and manual and mechanical ventilation. 2. Compare and contrast invasive and non-invasive monitoring methods of patient status and blood gas data. 3. Define the process of calibrating and maintaining quality control systems for blood gas analyzers 4. Distinguish between positive pressure and negative pressure artificial ventilation methods. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SP.

**RESP 2071. Laboratory Practice/Therapeutics II. 2 Hours.**

Laboratory portion of RESP 2070. Requires students to master artificial airway management skills including endotracheal intubation and bag-valve-mask ventilation. Also provides practice in blood gas sampling, noninvasive monitoring, basic ventilatory support, basic pulmonary function assessments and bedside spirometry. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour.

**\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Describe the clinical indications, contraindications, side effects, and goals of the following procedures, and demonstrate mastery of the skills required to initiate, monitor, assess the effectiveness of, and modify these procedures: a. Airway management; oral and nasal intubation of adults and children, and selection of appropriate equipment (including ET tubes, laryngeal masks/tubes, EOA's) b. Extubation c. Tracheostomies d. Manual ventilation e. Blood gas sampling and analysis, including arterial, capillary and in-dwelling arterial catheter samples f. Non-invasive monitoring. 2. Discuss and demonstrate the use of direct sampling versus non-invasive monitoring of blood gas data, including placement of transcutaneous and non-invasive probes for monitoring oxygen and carbon dioxide. 3. Describe the process of calibrating and maintaining quality control systems for blood gas analyzers. 4. Demonstrate competency in the use of different methods of artificial ventilation, including listing the indications and contraindications for each of the methods listed below and must also be able to assess the effectiveness of each method, monitor the patient receiving assisted ventilation, and suggest modifications for therapy if appropriate for each of the following: a. Manual ventilation with self-inflating and flow-inflating bags b. CPAP c. Bi-level CPAP. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SP.

**RESP 2100. Clinical Practice I. 5 Hours.**

Second semester course. Introduction to the hospital setting in order to practice clinical application of all skills mastered in RESP 2041 and RESP 2071 while developing interaction skills with patients and other members of the health care team. Proficiency must be demonstrated in providing therapies, monitoring and documenting care, and prioritizing to develop time management skills, while students participate in clinical care conferences and in evaluation of the appropriateness of care with respect to CPGs. 225 clinical hours. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Demonstrate proficiency in patient assessment and the initiation, monitoring, and assessment of the effectiveness of therapies including oxygen delivery, humidification, aerosol, and medication delivery, airway clearance, and lung expansion. 2. Recommend modifications to patient care plans with consideration for goals, side-effects, and contraindications of therapies. 3. Demonstrate appropriate professional behavior and compliance with clinical site performance standards. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SP.

**RESP 2200. Cardiopulmonary Diagnostics. 3 Hours.**

Third semester course. In-depth review of pulmonary function studies such as spirometry, lung volumes and diffusing capacities, bronchial provocation testing, and bronchodilator response studies as well as blood gas analysis and interpretation of arterial, capillary, and mixed venous blood gases, with an emphasis on case-based learning and application of diagnostic findings to initiating or modifying patient care. Introduction of cardiac assessments and interventions (EKGs, echocardiography, IABP support, and hemodynamics including Swann-Ganz and arterial catheters). This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Interpret simple spirometry/pulmonary function test results and identify common obstructive, restrictive, and interstitial diseases. 2. Identify basic tools and methods to measure pulmonary function, criteria for acceptability, and quality control requirements. 3. Distinguish normal/abnormal hemodynamic measurements, and their corresponding common disease processes. 4. Classify common EKG rhythms and their associated clinical manifestations and treatments. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SP.

**RESP 2300. Introduction to Mechanical Ventilation. 3 Hours.**

Third semester course. Theory and clinical indications of all modes of ventilatory support, emphasizing mastery of understanding the indications for initiation and continuation of ventilatory support, assessing and monitoring patients on life-support, integrating patient response to therapy with recommendations for modifying ventilator support, and determining the appropriate time and method for weaning from mechanical ventilation. Includes application of CPAP, BiPAP, negative pressure ventilation, and positive pressure ventilation, and introduces ventilators used in extended care or home care. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Select patients in need of mechanical ventilation. 2. Initiate mechanical ventilation in appropriate mode with appropriate settings. 3. Evaluate the patient on the ventilator and make appropriate changes as necessary to achieve desirable ABGs. 4. Wean patient from the ventilator. Use weaning parameters for decision making. 5. Analyze waveforms. 6. Describe all contra-indications and hazards of mechanical ventilation. 7. Explain and practice current strategies of mechanical ventilation. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SU.

**RESP 2301. Laboratory/Adult Mechanical Ventilation. 2 Hours.**

Lab portion of RESP 2300. Case-based practice in selecting appropriate mode of mechanical ventilation from a wide range of ventilation modes based on patient situations; then initiating, monitoring, assessing, and recommending changes to ventilatory support; and weaning from mechanical ventilation. A wide range of ventilation modes and applications are mastered through a case-based format. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Initiate continuous mechanical ventilation. 2. Manage a patient on a ventilator using current evidence based standards. 3. Monitor continuous mechanical ventilation to ensure patient safety 4. Wean a patient from a ventilator. 5. Choose appropriate ventilator modes. 6. Analyze wave forms. 7. Discuss current ventilator strategies. 8. Demonstrate ability to effectively and safely care for a patient on a ventilator. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SU.

**RESP 2400. Alternative Site and Subacute Respiratory Care. 1 Hour.**

Fourth semester course. Introduces practice of respiratory care in a home care/DME setting, pulmonary rehabilitation, patient education, smoking cessation, asthma management, and sleep disorders including sleep apnea. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Define the goals of a pulmonary rehabilitation program and describe the essential educational topics included in such a program. 2. Describe patient and family education and care of a pulmonary patient in the home. 3. Describe the specific patient education needs for patients with asthma, including medication administration and types of medications, self-monitoring, and asthma management. 4. Discuss the primary work responsibilities of a respiratory therapist employed in the home care/DME industry. 5. Describe several methods of smoking cessation and specifically describe the use of nicotine-replacement therapies. 6. Describe the types of sleep disorders and specifically note the criteria required for a diagnosis of sleep apnea based on polysomnography studies. 7. Discuss the care of patients in a LTAC setting. 8. Discuss a respiratory therapists role on the Life Flight team. 9. Acquire job seeking skills such as applications, resume writing, and job interviewing. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3005. Critical Care/ACLS. 3 Hours.**

Third semester course. Expands basic skills acquired in previous respiratory therapy courses and focuses on the presentation and management of patients in the ICU and emergency settings, emphasizing patient assessment and procedures involved in resuscitation including current practices in advanced life support. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Apply ACLS algorithms to clinical situations. 2. Describe the principles of monitoring the respiratory system (and other critical systems) of patients in the ICU. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SU.

**RESP 3010. Introduction to Respiratory Care Pharmacology. 3 Hours.**

Introduction to principles of pharmacology associated with treatment of infectious diseases and disorders of the hematologic, cardiovascular, pulmonary, endocrine, renal, GI, and neurologic systems, including administration routes and dosage calculation of selected medications. Sedation management, anesthesia, analgesia, chemotherapeutic agents, specific application of principles associated with aerosolized medications, and topical absorption are also included. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Identify administration routes and perform dosage calculations for the selected medications. 2. Demonstrate an understanding of the pharmacology associated with treatment of infectious diseases and disorders of the hematologic, cardiovascular, pulmonary, endocrine, renal, GI and neurologic systems. 3. Describe the concepts of pharmacologic management of sedation, anesthesia, analgesia, and chemotherapeutic agents. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3020. Neonatal/Pediatric Respiratory Care. 3 Hours.**

Fourth semester course. Introduces theory and practice of pediatric and neonatal respiratory care, including specific anatomy, physiology and pathophysiology associated with neonates and children. Includes assessment, management, ventilatory techniques and equipment specific to infants and children as well as pharmacology, with medications and dosages specific to infants and children, and ventilatory modes such as HFJV and oscillation ventilation. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Propose the appropriate assessment of newborn and pediatric patients (PLO1, PLO4); 2. Simulate neonatal resuscitation and the specific role of the respiratory therapist in this process (PLO1, PLO4); 3. Discriminate the indications, contraindications, and hazards of oxygen therapy, CPAP and High Flow for neonates (PLO1, PLO4); 4. Assess the procedure for administering surfactant, and other respiratory medications to infants and pediatric patients (PLO1, PLO4); 5. Assemble infant and pediatric ventilator circuits, and compose the appropriate ventilator settings for delivery of ventilation (PLO1, PLO4); 6. Evaluate nitric oxide therapy and select acceptable doses within therapeutic ranges (PLO1, PLO4) Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3021. Laboratory Practice/Neonatal Care. 2 Hours.**

Fourth semester course. Laboratory practice of techniques associated with airway management, ventilatory support, and resuscitation of infants and children. Case-based learning emphasizes patient assessment and initiation of appropriate respiratory support for infants and children. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Demonstrate the ability to appropriately use oxygen delivery equipment and apply it safely (PLO1, PLO4); 2. Demonstrate an understanding of the NeoPuff and be able to use it to provide CPAP, or resuscitation on newborn infants (PLO1, PLO4); 3. Demonstrate the ability to set up and adjust CPAP and High Flow systems (PLO1, PLO4); 4. Describe the procedure for administering surfactant, and other respiratory medications to neonates, infants, and pediatric patients (PLO1, PLO4); 5. Demonstrate the techniques of intubation of the infant and pediatric patient (PLO1, PLO4); 6. Demonstrate ability to set up infant and pediatric ventilator circuits, and determine appropriate ventilator settings for delivery of ventilation (PLO1, PLO4); Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3150. Critical Thinking Seminar/NBRC Review. 3 Hours.**

Fourth semester course. Comprehensive curriculum review based on NBRC credentialing exams. Case-based clinical simulations require students to integrate all concepts learned throughout the curriculum and clinical practice courses and apply this knowledge to branching-logic scenarios. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Prepare a study strategy to prepare for the successful completion of credentialing examinations based on results from the NBRC examination matrices. 2. Demonstrate mastery of the following as they pertain to the NBRC examination matrices and pass the Therapist Multiple-Choice (TMC) exam: evaluation of patient data, troubleshooting, quality control, infection control, initiation, and modification of interventions. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3310. Advanced Mechanical Ventilation. 4 Hours.**

Focuses on advanced techniques and skills for mechanical ventilation in critically ill patients including latest advances in ventilator technology and management strategies. This comprehensive interactive course emphasizes practical solutions for issues related to patients in respiratory failure. Topics include: Lung recruitment, advanced wave form analysis, heart and lung interaction during mechanical ventilation, ECMO, safe weaning from the ventilator and strategies to ventilate COPD and ARDS patients and palliative care and ventilation. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Explain and assess physiological aspects of patient- ventilator interaction. 2. Determine why and when mechanical ventilation can be a treatment, a supportive therapy or a source of complications. 3. Deliver evidence based management of acute respiratory failure using both non-invasive and invasive ventilator techniques for the following conditions : ARDS,COPD, and weaning from the mechanical ventilator. 4.Explain lung recruitment techniques and rational for use. 5. Define and describe ECMO including: choosing candidates for ECMO, cannulation procedure, Contraindications, and expected outcomes. 6. Critique new advances in ventilator management strategies. 7. Discuss the role of palliative care and end of life decisions related to ventilation. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3765. Clinical Practice III / Clinical Application of Neonatal / Pediatric Respiratory Care. 5 Hours.**

Capstone clinical practice course includes experience in neonatal intensive care as well as demonstrating continuing competency in adult intensive care, emergency care, and general respiratory care. Clinical rotations include experience in the home care setting and sleep laboratory. 300 clinical hours. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Demonstrate competence in appropriate assessment of neonatal and pediatric patients. 2. Develop competence in the recommendation and initiation of respiratory therapeutic interventions in neonatal and pediatric patients. 3. Express competence in airway and mechanical ventilation management in neonatal and pediatric patients. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. FA.

**RESP 3775. Clinical Practice II / Clinical Application of Adult Critical Care. 5 Hours.**

Clinical experience course emphasizing the provision of mechanical ventilation and assessment of patients in the emergency and intensive care settings. 225 clinical hours. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Explain how to initiate and operate NPPV. 2. Demonstrate proficiency in initiating and management of continuous mechanical ventilation. 3. Assemble a ventilator circuit. 4. Modify ventilator modes and settings. 5. Explain static and dynamic compliance and their application in ventilator management. 6. Interpret ventilator wave forms. 7. Participate as a member of an interdisciplinary team in the Intensive Care Unit. Course fee required. Prerequisite: Admission to the Utah Tech University Respiratory Therapy program. SU.

**RESP 4230. Advanced Diagnosis, Assessment, and Management of Respiratory Disease. 3 Hours.**

Explores pulmonary disease management and presents the pathophysiology, diagnosis and management of pulmonary diseases that therapists will encounter in clinical practice. Builds on the development of care plans and evidence based protocols. Examines the economics of American healthcare and healthcare reform. Focuses on COPD disease navigators and Asthma educators. This course requires a Differential Tuition Rate which is an additional fee of \$65 charged per credit hour. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful completion of this course, the students will be able to: 1. Assess, diagnose, and manage respiratory diseases. 2. Articulate a class discussion on inpatient and outpatient strategies of disease management. 3. Design an evidence based protocol. 4. Develop a patient care plan based on an assigned diagnosis. 5. Identify and research current problems facing the healthcare system. Prerequisites: Admission to the Utah Tech University Respiratory Therapy program and RESP 2065 (Grade C or higher). SP.

**RESP 4300. Current Respiratory Topics. 3 Hours.**

Students will identify and analyze current topics in respiratory care from peer-reviewed sources. Topics will have implications on current practices, best practices, healthcare trends, and current research. Course fee required. Prerequisites: Admission to the online Registered Respiratory Therapy to Bachelor of Science Respiratory Therapy program. FA, SP.

**RESP 4400. Senior Theory. 3 Hours.**

Analyze and appraise various techniques, methods, and innovation in critical patient care with emphasis on the respiratory and cardiovascular system. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of the course students will: 1. Assess the application of technological innovations in patient care and healthcare delivery. 2. Develop a plan to analyze the health status of a critically ill patient, with a chosen diagnosis, in respiratory care. 3. Critique diagnostic techniques and methods in respiratory care. SU.

**RESP 4410. Teaching Foundations and Techniques for Healthcare Professionals. 4 Hours.**

Introduces theory and practice of education, focusing on the daily education of patients, colleagues, and students in the classroom and clinical setting. This course covers teaching and learning techniques, the significance of interprofessional collaboration, assessment, the influence of socioeconomic on education, and the role of the health professional as an educator. **\*\*COURSE LEARNING OUTCOMES (CLOs)** At the successful conclusion of this course, students will be able to: 1. Articulate the basic approaches of psychological learning theories: behaviorist, cognitive, social, psychodynamic, and humanistic; 2. Identify the 6 major ethical principles: autonomy, veracity, confidentiality, beneficence, nonmaleficence, and justice; 3. Appraise the physical, cognitive, and psychosocial characteristics of learners that influence learning and the appropriate teaching strategies; 4. Outline various teaching strategies useful in educating clients with low literacy skills, socioeconomic barriers, and disabilities; 5. Examine cultural assessment from the perspective of different models of care; and 6. Analyze the relationships among evaluation, evidence-based practice, and practice-based evidence; Prerequisites: Admission to the Utah Tech University Respiratory Therapy program. SP.



**RESP 4990. Senior Seminar. 2 Hours.**

Senior seminar for respiratory care creating a senior project that applies knowledge and concepts through the use of problem-based learning methods in the research and evaluation of industry best practices. \*\*COURSE LEARNING OUTCOMES (CLOs) At the conclusion of this course students will: 1. Discuss and Evaluate current issues in respiratory care. 2. Analyze the persons affected by current issues in respiratory care. 3. Create a strategic approach to improve these issues or educate persons affected by these issues. Course fee required. Prerequisites: Admission to the online Registered Respiratory Therapy to Bachelor of Science Respiratory Therapy program. FA, SP.