

# RESPIRATORY CARE (RESP)

## RESP 2110 Cardiopulmonary Physiology – 2 credits

This is a comprehensive overview of the physiology and pathophysiology of the pulmonary, cardiovascular, and renal systems as they relate to respiratory care.

**Prerequisite:** Admission to the respiratory care major.

## RESP 2120 Fundamentals of Respiratory Care – 6 credits

This course covers therapeutic modalities and equipment used in respiratory care. Medical gas production and storage is also addressed. Emphasis is on patient assessment, clinical application of therapies, therapy evaluation and communication techniques. The course also examines the roles of respiratory care in the healthcare system and the respiratory care services scope-of-care. Introduction of the role the respiratory care practitioner assumes in an organization, in a respiratory care department, and as a part of a healthcare team are covered.

**Prerequisite:** Admission to the respiratory care major.

## RESP 2130 Pharmacology – 2 credits

This course acquaints the student with general principles of pharmacology. It provides a comprehensive review of all drugs and drug groups that are administered by respiratory care practitioners or play an integral part in the management of patients they encounter. Emphasis is on the respiratory care clinical application of pharmacological agents, their therapeutic effects, mechanism of action and adverse effects.

**Prerequisite:** Admission to the respiratory care major.

## RESP 3100 Principles of Ventilation with Lab – 4 credits

The focus of this course is mechanical ventilation theory and techniques using various adult ventilators. Blood gas interpretation and its relationship to respiratory care are addressed using lecture/discussion and computer-assisted instruction modules. Intervention strategies used in the management of critically ill patients on life-support are presented, as are advanced skills in pulmonary function diagnostic testing. Critical analysis and problem-solving skills are practiced using patient management situations and case scenarios. Ethical issues related to the management and respiratory care of critically ill patients are discussed. Offered in the College for Women.

**Prerequisites:** RESP 2200, BIOL 2200, BIOL 2610, BIOL 2620 with a minimum grade of C.

**Co-requisites:** RESP 3110, RESP 3120.

## RESP 3110 Clinical Applications I – 2 credits

This clinical experience focuses on clinical applications of gas therapy, chest physiotherapy, and hyperinflation techniques. Students utilize cognitive, interactive, and psychomotor skills in the assessment process. Interpersonal communication skills and cultural sensitivity between student, patient, family, and other healthcare team members are emphasized and practiced. Offered in the College for Women.

**Prerequisites:** RESP 2110, RESP 2120, RESP 2130.

**Corequisites:** RESP 3120, RESP 3300, RESP 3400.

## RESP 3120 Pathophysiology in Critical Care I – 2 credits

This course presents an in-depth overview of advanced cardiopulmonary anatomy, physiology, and related pathology. Skills used to facilitate the coordination of patient care with healthcare professionals are emphasized through interaction with various members of the healthcare team. Offered in the College for Women. Offered in the College for Women.

**Prerequisites:** RESP 2110, RESP 2120, RESP 2130. Admission to the major.

**Corequisites:** RESP 3110, RESP 3300, RESP 3400.

## RESP 3200W Advanced Therapeutics with Lab – 4 credits

This course is designed to orient students to hemodynamic monitoring, electrocardiographic interpretation and arrhythmia recognition. Neonatal/pediatric respiratory care modalities, including ventilation and monitoring alternatives, are discussed. Research methods in respiratory care are presented in conjunction with a student project. Pulmonary rehabilitation and home care strategies are reviewed with emphasis on patient's quality of life. Intervention strategies are used to maximize communication with patients. This course is a designated writing intensive course. A variety of writing assignments are incorporated, including a formal research paper in accordance with Respiratory Care Journal publication guidelines.

**Prerequisite:** RESP 3100 with minimum C grade.

**Corequisites:** RESP 3210, RESP 3220.

## RESP 3210 Clinical Applications II – 4 credits

This course focuses on the clinical application of higher-level skills in the emergency and critical care settings. The primary emphasis of this clinical experience is on the ventilator management of patients across the lifespan (including neonatal, pediatric and adult patient populations). Students travel to clinical experiences two days per week in hospitals and clinics around the Twin Cities. Concepts related to critical thinking, ethics, interpersonal relationships, cultural diversity, and death and dying are integrated and addressed throughout this course. Principles of case management and the holistic assessment of total patient needs are emphasized using bedside patient rounds. Offered in the College for Women.

**Prerequisites:** RESP 3110, INDI 3150, current AHA BLS for HCPs.

**Corequisites:** RESP 3200W, RESP 3220.

## RESP 3220 Pathophysiology in Critical Care II – 2 credits

This course is a continuation of RESP 3120. This course presents an in-depth overview of advanced cardiopulmonary anatomy, physiology and pathology from the medical perspective. Communication skills used to facilitate the coordination of patient care with physicians and other healthcare professionals are emphasized through interaction with pulmonologists and/or other primary care physicians. Offered in the College for Women.

**Prerequisite:** RESP 3120.

**Corequisites:** RESP 3330, RESP 4300 and RESP 4310.

## RESP 3230 Clinical Applications II – 6 credits

**Catalog Description:** This course focuses on the clinical application of high-level skills in the emergency and critical care settings. The primary emphasis of this clinical experience is on the ventilator management of patients across the lifespan (including neonatal, pediatric, and adult populations). Students travel to clinical experiences two days per week in hospitals and clinics around the Twin Cities. Concepts related to critical thinking, ethics, interpersonal relationships, cultural diversity, and death and dying are integrated and addressed throughout this course. Principles of case management and the holistic assessment of total patient needs are emphasize using bedside patient rounds. Prerequisite(s): RESP 3110, RESP 3120, RESP 3300, RESP 3400.

## RESP 3300 Cardiopulmonary Critical Care I – 4 credits

The student will develop knowledge and skills in the area of hospital critical care. Topics will include respiratory failure, airway management, arterial blood gas procurement, hemodynamic monitoring, mechanical ventilation, and chest trauma. Subtopics in mechanical ventilation consist of basic terms and concepts, mechanical ventilation function, breath delivery, indications for mechanical ventilation, mode selection, and initial settings.

**Prerequisites:** RESP 2110, RESP 2120, RESP 2130.

**Corequisites:** RESP 3110, RESP 3120, RESP 3400.

**RESP 3310 Clinical Applications III – 6 credits**

This is a continuation of RESP 3210 clinical activities. A lecture/discussion component addresses clinical topics and reviews content relevant to national board examinations.

**Prerequisites:** RESP 3200W, RESP 3210, RESP 3220 with a minimum grade of C, current AHA BLS for HCPs.

**RESP 3330 Clinical Applications III – 4 credits**

**Catalog Description:** This course focuses on the clinical application of high-level skills in the emergency and critical care settings. The primary emphasis of this clinical experience is on the ventilator management of patients across the lifespan (including neonatal, pediatric, and adult populations). Students travel to clinical experiences two days per week in hospitals and clinicals around the Twin Cities. Concepts related to critical thinking, ethics, interpersonal relationships, cultural diversity, and death and dying are integrated and addressed throughout this course. Principles of case management and the holistic assessment of total patient needs are emphasize using bedside patient rounds.

**Prerequisite:** RESP 3230.

**Corequisites:** RESP 4300 and RESP 4310.

**RESP 3400 Cardiopulmonary Diagnostics – 2 credits**

This course is a detailed review of the procedures, equipment, interpretation, and analysis used in the diagnosis of cardiopulmonary disease. Diagnostic procedures will include non-invasive oxygen and carbon dioxide measurements, arterial blood gas analysis, pulmonary function testing, thoracic imaging studies, clinical laboratory data, the electrocardiogram, bronchoscopy, thoracentesis, cardiopulmonary exercise studies and sleep studies.

**Prerequisites:** RESP 2110, RESP 2120, RESP 2130.

**Corequisites:** RESP 3110, 3120, RESP 3300.

**RESP 4100 Advanced Critical Care with Lab – 4 credits**

Using the Advanced Resuscitation and Intervention guidelines from the American Heart Association, emergency cardiopulmonary care for the adult, pediatric and neonatal patient are addressed. Interpretation of clinical case data promotes evidence-based analysis, critical thinking and clinical decision making in respiratory care. Respiratory care department management structure and responsibilities are discussed with review of standards required for accreditation. Offered in the College for Women.

**Prerequisites:** RESP 3200W, RESP 3220, RESP 3310 with a minimum grade of C.

**RESP 4115 Clinical Specialty I – 4 credits**

Students focus on a specialty option within respiratory care. Specialty options include adult critical care, pediatric critical care, neonatal critical care, management, education, cardiopulmonary diagnostics, hemodynamics, research, polysomnography, pulmonary rehabilitation and home care. Principles of communication, team building, critical analysis, teaching/learning, cultural sensitivity and professional role development are emphasized in each of these areas of clinical focus. Students consult with the program clinical director to make a specialty track selection. This required clinical specialty option may be completed in RESP 4115 or RESP 4225. This course may be taken multiple times in different clinical specialties. Offered in the College for Women.

**Prerequisites:** RESP 3310 and current AHA BLS CPR for HCPs.

**RESP 4225 Clinical Specialty II – 4 credits**

Students focus on a specialty option within respiratory care. Specialty options include adult care, pediatric care, neonatal care, management, education, cardiopulmonary diagnostics, hemodynamics, research, polysomnography, pulmonary rehabilitation and home care. Principles of communication, team building, critical analysis, teaching-learning, cultural sensitivity and professional role development are emphasized in each of these areas of clinical focus. Students consult with the program clinical director to make a specialty track selection. This required clinical specialty option may be completed in RESP 4115 or RESP 4225. This course may be taken multiple times in different clinical specialties. Offered in the College for Women.

**Prerequisites:** RESP 3310 and current AHA BLS CPR for HCPs.

**RESP 4300 Cardiopulmonary Critical Care II – 4 credits**

The student will refine knowledge and skills in the critical care setting. Emphasis will be on management of the ventilator-patient system.

Topics will include physical examination of the mechanically ventilated patient, ventilator graphics, troubleshooting the ventilator-patient system, ventilator adjustments to achieve optimal oxygenation and ventilation, disease specific ventilator management, non-conventional modes of mechanical ventilation, and pediatric mechanical ventilation.

**RESP 4310 Neonatal/Pediatric Respiratory Care – 2 credits**

The focus will be on the respiratory care of neonatal and pediatric patients, with emphasis on the management of cardiopulmonary disease states unique to children. Information will be based on developmental anatomy and physiology, pathology, diagnostic/laboratory assessments, and associated patient management in the acute, critical, emergency care, transport, and home care settings.

**Prerequisite:** RESP 3230 **Corequisite(s):** RESP 3330, RESP4300.

**RESP 4601 Internship – 1 credit**

This is a structured out-of-class learning experience that takes place on- or off-campus and includes a substantial work component. An internship involves students in a particular profession in an exploratory way to test career interests and potential. To initiate an internship experience, meet with the internship coordinator in the Career Development Office.

**Prerequisites:** Faculty sponsorship and approval by department chair.

**RESP 4602 Internship – 2 credits**

Structured out-of-class learning experience that takes place on or off campus and includes a substantial work component. An internship involves you in a particular profession in an exploratory way to test career interests and potential. To initiate an internship experience, meet with the internship coordinator in the Career Development Office.

**Prerequisites:** Faculty sponsorship and approval by department chair.

**RESP 4604 Internship – 4 credits**

This is a structured out-of-class learning experience that takes place on- or off-campus and includes a substantial work component. An internship involves students in a particular profession in an exploratory way to test career interests and potential. To initiate an internship experience, meet with the internship coordinator in the Career Development Office.

**Prerequisites:** Faculty sponsorship and approval by department chair.

**RESP 4800W Senior Seminar – 4 credits**

This capstone course provides an opportunity for students to refine their knowledge and abilities to access and critically evaluate the professional literature in respiratory care for evidence-based practice. Seminar topics address professional role development as advanced respiratory care practitioners. Students conduct an in-depth review of current topics and materials in preparation for their comprehensive program examination and national board examination. A student project integrates research methods used in respiratory care. This course is a designated writing intensive course. A variety of writing assignments are incorporated, including a formal research paper in accordance with Respiratory Care Journal publication guidelines. Offered in the College for Women.

**Prerequisite:** RESP 4300 and RESP 4310 with a minimum grade of C.

**Corequisite:** RESP 4115.

**RESP 4952 Independent Study – 2 credits**