Respiratory Care (RC)

**RC 2213. Introduction to Respiratory Care.**
This course offers an in-depth overview of the respiratory care profession to acquaint the student with the responsibilities of the respiratory therapist as part of the healthcare team. Progression of the profession, career opportunities, past and future impact of profession on patient recovery and health maintenance, and medical gas therapy will be covered.

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3125. Pulmonary Function Testing.**
This course examines the most common pulmonary function tests, their techniques, and the pathophysiologies that may be evaluated by each test. Pulmonary function equipment, calibration, and the American Thoracic Society guidelines will be discussed. Laboratory practice of performing the tests will be provided to develop skills for testing patients.

1 Credit Hour. 0 Lecture Contact Hours. 4 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3212. Pharmacology.**
A comprehensive study of pharmacology principles. Receptor theory, clinical applications of medications, and historical analysis of first-generation medications will be covered. Current medication trends and recommendations are also examined.

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3232. Hemodynamics.**
This course is an advanced study of cardiovascular hemodynamic measurements. Normal cardiovascular physiology and measures are examined, as well as variations caused by disease. Current clinical trends and practices in hemodynamic procedures are also explored.

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3313. RC Clinical Practice I.**
This course provides an introduction to respiratory care clinical skills, including vital signs, chest assessment, infection control, aerosolized medication delivery, oxygen therapy, hyperinflation therapy, and airway clearance. This course prepares the student for direct patient care to be performed in more advanced courses. Direct patient care is performed under close supervision.

3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3314. Respiratory Care Instrumentation.**
Through lectures and lab exercises, students are acquainted with concepts of design, function, and operation of basic respiratory care equipment. Oxygen cylinders, regulators, flowmeters, oxygen analyzers, oximeters, oxygen adjuncts, humidifiers, nebulizers, airways, and pressure cycled ventilators will be covered. The course also covers respiratory pharmacology, decontamination of equipment, and arrhythmia recognition.

**RC 3315. Cardiopulmonary - Renal Anatomy & Physiology.**
This course provides an in-depth human gross anatomy study of the cardiac, respiratory, and renal systems. Clinical application of pulmonary anatomy and physiology will also be explored.

3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3316. Fundamentals of Respiratory Care.**
This course provides a study of theories and modalities utilized in delivering, monitoring, and evaluating basic respiratory care to patients with compromised respiratory function in various healthcare settings. Aspects of artificial ventilation, arterial blood gas analysis, lung volume diagnostics, and hyperinflation intervention will be covered in patient scenarios.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter

**RC 3321. Cardiopulmonary Pathology.**
As an introduction to the assessment, treatment, and pathophysiology of respiratory diseases, this course focuses on the signs, symptoms, etiology, pathophysiology, diagnosis and treatment of selected diseases. Utilizing clinical simulation software to develop critical thinking regarding assessment, diagnostic data gathering. (WI).

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Writing Intensive
Grade Mode: Standard Letter

**RC 3322. Critical Care Concepts.**
This course provides students with an in-depth study of selected respiratory care techniques with an emphasis on the care of critically ill patients. Critical skills and knowledge of mechanical ventilation, bedside diagnostic techniques, patient monitoring, and rehabilitation are explored in the critical care setting.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
RC 3323. RC Clinical Practice II.
Students perform clinical procedures and interact with patients and professional personnel in a healthcare institution under the supervision of a respiratory therapist. Students gain direct patient care experience as presented in medical/surgical and pediatric clinical situations. Preparatory instruction is provided for mechanical ventilation and other critical care procedures.
Grade Mode: Standard Letter
Credit Hours: 3
Lecture Contact Hours: 0
Lab Contact Hours: 16
about RC Clinical Practice II

RC 3324. Critical Care Instrumentation.
A comprehensive study of advanced equipment and technology utilized in the critical care, homecare, pulmonary rehabilitation and blood gas lab settings. Lectures and class activities will detail hardware for hemodynamic monitoring, supplemental oxygen administration, noninvasive monitoring, blood gas measurement, quality control and assurance and mechanical ventilator concepts.
Grade Mode: Standard Letter
Credit Hours: 3
Lecture Contact Hours: 2
Lab Contact Hours: 3
about Critical Care Instrumentation

RC 3333. RC Clinical Practice III.
A supervised clinical education experience in which the student administers advanced respiratory therapies to patients in the adult critical care setting. Diagnostic and monitoring procedures, including arterial blood gases, bedside physiologic monitoring, airway care, advanced pulmonary function testing, ventilator management will be performed according to physician orders.
Grade Mode: Standard Letter
Credit Hours: 3
Lecture Contact Hours: 0
Lab Contact Hours: 16
about RC Clinical Practice III

RC 3334. Neonatal Respiratory Care.
An in-depth study of neonatal utero development, fetal lung development, fetal circulation, and cardiovascular changes at birth. Neonatal respiratory emergencies, neonatal respiratory diseases and management, congenital defects, and respiratory care procedures specific to the neonate will be discussed. A specific emphasis on neonatal mechanical ventilation will be included.
Grade Mode: Standard Letter
Credit Hours: 3
Lecture Contact Hours: 2
Lab Contact Hours: 3
about Neonatal Respiratory Care

RC 3335. RC Clinical Practice IV.
This course provides an advanced clinical education experience in respiratory therapeutics on patients in the adult critical care setting. Appropriate clinical expectations include experience in arterial blood gas procurement and measurement, bedside physiologic monitoring, airway care, and monitoring of mechanical ventilation in the intensive care unit.
Grade Mode: Standard Letter
Credit Hours: 3
Lecture Contact Hours: 0
Lab Contact Hours: 16
about RC Clinical Practice IV

RC 4211. Respiratory Care Research.
This course provides an introduction to applied experimental design, research ethics, and data analysis focusing on the respiratory care profession. Students will participate in each step the research process from developing a personal research hypothesis and research design through IRB submission. Prerequisite: HP 3302 or equivalent.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
Course Attribute(s): Exclude from 3-peat Processing
about Respiratory Care Research

RC 4212. Critical Care Clinical Simulation.
This course will prepare respiratory care students to successfully navigate multiple clinical simulation patient cases. Clinical simulations covered reflect real-life patient scenarios and mirror the content found on national board exams. Students will receive focused attention on board exam review and evidence-based care.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 1
Lab Contact Hours: 3
about Critical Care Clinical Simulation

RC 4223. ICU Internship.
Through affiliations with agencies, hospitals and selected treatment centers, the student intern in the intensive care setting by providing patient care and administering critical care therapeutics. Analysis and clinical application of advanced ventilator care of patients is emphasized along with patient care diagnostics and management in the ICU.
Grade Mode: Credit/No Credit
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
about ICU Internship

RC 4224. Research Seminar.
A study of the research process from a review of research design to methodology implementation including data collection, statistical analysis, and presentation of a research proposal on a topic in the respiratory care discipline. The course provides direct research experience culminating in a research paper and presentation. Prerequisite: RC 4211.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 2
Lab Contact Hours: 0
Course Attribute(s): Exclude from 3-peat Processing
about Research Seminar

RC 4225. Specialization Internship.
This course provides the student with an internship opportunity to gain clinical experience in sub-specialty areas including pediatrics, adult intensive care, neonatal intensive care, pulmonary function testing, home care/durable medical equipment, subacute care, pulmonary rehabilitation, polysomnography, education, and research. Specific specialty offerings will be based on clinical availability.
Grade Mode: Credit/No Credit
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
Course Attribute(s): Exclude from 3-peat Processing
about Specialization Internship

RC 4211. Respiratory Care Research.
This course provides an introduction to applied experimental design, research ethics, and data analysis focusing on the respiratory care profession. Students will participate in each step the research process from developing a personal research hypothesis and research design through IRB submission. Prerequisite: HP 3302 or equivalent.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
Course Attribute(s): Exclude from 3-peat Processing
about Respiratory Care Research

RC 4212. Critical Care Clinical Simulation.
This course will prepare respiratory care students to successfully navigate multiple clinical simulation patient cases. Clinical simulations covered reflect real-life patient scenarios and mirror the content found on national board exams. Students will receive focused attention on board exam review and evidence-based care.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 1
Lab Contact Hours: 3
about Critical Care Clinical Simulation

RC 4223. ICU Internship.
Through affiliations with agencies, hospitals and selected treatment centers, the student intern in the intensive care setting by providing patient care and administering critical care therapeutics. Analysis and clinical application of advanced ventilator care of patients is emphasized along with patient care diagnostics and management in the ICU.
Grade Mode: Credit/No Credit
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
about ICU Internship

RC 4224. Research Seminar.
A study of the research process from a review of research design to methodology implementation including data collection, statistical analysis, and presentation of a research proposal on a topic in the respiratory care discipline. The course provides direct research experience culminating in a research paper and presentation. Prerequisite: RC 4211.
Grade Mode: Standard Letter
Credit Hours: 2
Lecture Contact Hours: 2
Lab Contact Hours: 0
Course Attribute(s): Exclude from 3-peat Processing
about Research Seminar

RC 4225. Specialization Internship.
This course provides the student with an internship opportunity to gain clinical experience in sub-specialty areas including pediatrics, adult intensive care, neonatal intensive care, pulmonary function testing, home care/durable medical equipment, subacute care, pulmonary rehabilitation, polysomnography, education, and research. Specific specialty offerings will be based on clinical availability.
Grade Mode: Credit/No Credit
Credit Hours: 2
Lecture Contact Hours: 0
Lab Contact Hours: 8
Course Attribute(s): Exclude from 3-peat Processing
about Specialization Internship
This course provides an in-depth study of specific adult mechanical ventilators addressing traditional and proposed ventilator classification, various methods of operation, parameter interrelationships and ventilator patient monitoring. Lectures and class activities will focus on ventilator analysis of several contemporary volume-, time-, pressure- and flow-cycled ventilators with advanced graphics interpretation required. about Advanced Ventilator Concepts
3 Credit Hours. 2 Lecture Contact Hours. 3 Lab Contact Hours.
Grade Mode: Standard Letter
about Advanced Ventilator Concepts

RC 4316. RC Clinical Practice IV.
This course provides an advanced intensive care clinical education requiring students to monitor and administer critical care therapeutics on assigned patients in the adult and neonatal critical care setting. Cardiopulmonary diagnostic experience will be gained through arterial blood gas and co-oximetry assessment with ventilator graphic analysis.
about RC Clinical Practice IV
3 Credit Hours. 0 Lecture Contact Hours. 16 Lab Contact Hours.
Grade Mode: Standard Letter
about RC Clinical Practice IV

RC 4317. Pulmonary Rehabilitation.
This course is designed to introduce students to the medical, ethical, and insurance reimbursement issues of pulmonary rehabilitation, homecare, and sleep diagnostic facilities. The role of therapists in case management, treatment requirements, and discharge planning along with the impact of legislation, regulations, and politics will be explored.
about Pulmonary Rehabilitation
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Pulmonary Rehabilitation

RC 4318. Independent Study in Respiratory Care.
This course provides the student an in-depth study on a topic or healthcare problem impacting respiratory care. The course may be repeated for credit with a different emphasis.
about Independent Study in Respiratory Care
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing
Grade Mode: Standard Letter
about Independent Study in Respiratory Care

RC 4321. Leadership and Management for Respiratory Care Professionals.
This course is designed to comprehensively examine the dynamic evolution of respiratory care as a profession. The role of the respiratory care professional in the areas of leadership, management, and professional ethics will be explored with regards to the profession’s impact on legislation, regulation, and politics. (WI).
about Leadership and Management for Respiratory Care Professionals
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Writing Intensive
Grade Mode: Standard Letter
about Leadership and Management for Respiratory Care Professionals

RC 4322. RC Practitioner Seminar.
Students will research and present selected case studies by students to physicians, therapists, and colleagues. Presentations will emphasize total patient management with etiology, symptoms, pathophysiology, diagnosis, and treatment of specific diseases including asthma, pulmonary embolism, CHF, COPD, ARDS, neurologic diseases, inhalational injury, pneumonia, sleep disordered breathing, AIDS, and drug overdose. (WI).
about RC Practitioner Seminar
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Writing Intensive
Grade Mode: Standard Letter
about RC Practitioner Seminar

RC 5211. Polysomnography Instrumentation I.
Designed to teach the function, operation, and design of electoneurodiagnostic equipment. Monitoring devices, electrode application, and patient connection will be covered in detail. Prerequisite: Departmental approval.
about Polysomnography Instrumentation I
2 Credit Hours. 0 Lecture Contact Hours. 2 Lab Contact Hours.
Grade Mode: Standard Letter
about Polysomnography Instrumentation I

RC 5214. Polysomnography Instrumentation II.
Advanced study of waveform characteristics and montage development, filters, and PSG electronics. Signal pathways, reference electrodes, impedance checking and filter settings in calibration waves will be covered. Prerequisite: Departmental approval.
about Polysomnography Instrumentation II
2 Credit Hours. 0 Lecture Contact Hours. 2 Lab Contact Hours.
Grade Mode: Standard Letter
about Polysomnography Instrumentation II

RC 5215. Clinical Polysomnography-Sleep Staging II.
Advanced clinical education in sleep staging rules, light, delta and REM sleep scoring and analysis. EEG, EMG, ECG and respiratory events will be discussed in depth and are components of the polysomnogram report. A research project and presentation will be assigned by the faculty. Prerequisite: Departmental approval required.
about Clinical Polysomnography-Sleep Staging II
2 Credit Hours. 0 Lecture Contact Hours. 10 Lab Contact Hours.
Grade Mode: Standard Letter
about Clinical Polysomnography-Sleep Staging II

Introduction to the physiology of sleep, including sleep neurology, sleep architecture, and classification of sleep disorders. Review of basic cardiac physiology and ECG arrhythmia recognition. Sleep pathologies will be discussed according to etiology, pathophysiology, symptoms, diagnosis, treatment, and prognosis. Prerequisite: Departmental approval.
about Fundamentals of Polysomnography
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Fundamentals of Polysomnography
RC 5312. Clinical Polysomnography-Sleep Staging I.
Direct patient diagnostic monitoring is performed under close supervision in a sleep lab. Differential amplifiers, amplifier calibration, artifact correction and the professional role of the sleep tech will be demonstrated. A research project and presentation will be assigned by the faculty. Prerequisite: Departmental approval required.

3 Credit Hours. 0 Lecture Contact Hours. 10 Lab Contact Hours. Grade Mode: Standard Letter

RC 5313. Polysomnographic Therapeutic Intervention.
In-depth study of the treatments available for sleep apnea including, CPAP, BiPAP, oxygen therapy, patient adjunctive fitting, surgical intervention, and the role of the sleep tech in titration. Special attention will be given to titration algorithms, nocturnal seizure disorder studies, REM behavior disorder studies, MSLT’s, and MTW’s. Prerequisite: Departmental approval.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours. Grade Mode: Standard Letter