



Course Outline

2026-2027 Catalog

RT 140 - Fundamentals of Intensive Respiratory Care

Catalog Description

Transfer Status: NT

Prerequisite: RT 135

Corequisite: RT 142, RT 145

Unit(s): 6.00

Lecture: 85.00 Contact hours/170.00 Out of class hours/255.00 Total hours/5.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 136.00 Contact hours/170.00 Out of class hours/306.00 Total hours/6.00 Unit(s)

Course Description: This course is a study of the fundamentals of respiratory care in the critical care setting. Emphasis is placed on the critical care environment, advanced patient assessment, monitoring, advanced techniques of airway management and continuous mechanical ventilatory support. Graded only.

Objectives

Upon successful completion of this course, the student should be able to:

1. Accurately assess a patient's need for mechanical ventilation versus non-invasive positive pressure ventilation.
2. Explain the fundamental operational principles of mechanical ventilators.
3. Demonstrate, within the laboratory environment, the ability to operate mechanical ventilators.
4. Select appropriate initial ventilator settings, based on the patient's primary diagnosis.
5. Demonstrate the ability to effectively communicate with fellow students and other health care personnel within the classroom and laboratory environments.
6. Perform advanced clinical assessment, within the laboratory environment, of simulated acutely ill patients requiring mechanical ventilation.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Physical Assessment in Critical Care	5.00
Basic Terms and Concepts of Mechanical Ventilation	10.00
Establishing the Need for Mechanical Ventilation	10.00
Physical Aspects of Mechanical Ventilation and How a Breath is Delivered	5.00
Selecting Modes, Initial Settings and Final Considerations in Ventilator Set-up	20.00
Effects/Complications of Mechanical Ventilation	10.00
Improving Oxygenation	5.00
Discontinuation/Weaning from Mechanical Ventilation	5.00
Interpreting Ventilator Graphics	5.00
Acute Respiratory Distress Syndrome (ARDS)	5.00
Hemodynamic Interpretation	5.00
Total Hours: 85.00	

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Difficult/Emergent airway management	3.00
Endotracheal Intubation and Extubation	3.00
Patient-Ventilator System Check	6.00
Initial Ventilator Settings and Arterial Line Draw Review	9.00
Non-Invasive Positive Pressure Ventilation (NIPPV) Setup and Operation	3.00
Neonatal/pediatric mechanical ventilation	3.00
Ventilator Operational Check and Initial Set-up	9.00
Ventilator Specialty Modes	3.00
Small Volume Nebulizer Affect on Mechanical Ventilation	3.00
Pressure Control Ventilation	3.00

Topics**Lab Hrs**

Troubleshooting Mechanical Ventilation

6.00

Total Hours: 51.00**Methods of Instruction**

- A. Collaborative Group Work
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Instructor Demonstrations
- D. Laboratory Experiments
- E. Lecture
- F. Problem-Solving Sessions
- G. Community Service

Methods of Evaluation

- A. Quizzes
- B. Oral Presentation
- C. Demonstration
- D. Homework
- E. Class participation
- F. Lab Projects
- G. Final Examination
- H. Written Examinations

Examples of Assignments**Reading Assignments**

1. Read the assigned reading for Assessment of Critically Ill Patient and be prepared to participate in classroom discussion on the topic.
2. Read the assigned readings for Need for Mechanical Ventilation and be prepared to participate in classroom discussion on the topic.

Writing Assignments

1. Using the assigned reading, complete each item listed on the Learning Objectives for Assessment of the Critically Ill Patient.
2. Complete an initial ventilator settings worksheet, using assigned readings, and classroom discussions.

Out-of-Class Assignments

1. Complete the assigned quizzes in RT Board Review with a grade of 75% or better.
2. Complete the assigned end of the chapter questions in the textbook, Mechanical Ventilation, Chapter 3, Physical Aspects of Mechanical Ventilators.

Recommended Materials of Instruction

Cairo JM. (2018). Mosby's Respiratory Care Equipment. *Mosby, 10th*.

Pillbeam, SP, Cairo JM. (2016). Mechanical Ventilation: Physiologic and Clinical Applications. *Mosby, 6th*.

Wilkins RL, Sheldon RL, Krider SJ. (2017). Clinical Assessment in Respiratory Care. *Mosby, 8th*.

Wilkins RL, Stoller JK, Scanlan CL. (2017). Egan's Fundamentals of Respiratory Care. *Mosby, 11th*.

Corning, H., et al. (2013). Mosby's Respiratory Care PDQ. *Mosby, 2nd*.

Minimum Qualifications

Respiratory Technician
Respiratory Technologies

Created/Revised by: Davis, Donna**Date:** 04/30/2018