Common Course Outline
RESP 103
Therapeutics & Pathology
3 Credits

Community College of Baltimore County

Description

RESP 103 – Therapeutics & Pathology is the second professional course in the program where changes in ventilation, diffusion of gases and oxygenation related to various respiratory pathologies are investigated. Students are introduced to the therapeutic management of ventilation, diffusion and oxygenation impairment including advanced bronchial hygiene techniques, recognizing changes in acid/base balance, noninvasive ventilation and high flow oxygen therapy. Ethical principles and their application to therapeutic patient management are discussed.

3 Credits

Prerequisite: RESP 102
Co-requisite: RESP 104

Overall Course Objectives

Upon completion of this course students will be able to:

1. describe the various therapy modalities associated with bronchial hygiene therapy;
2. describe acid/base balance;
3. classify arterial blood gases;
4. identify the different lung volumes and capacities;
5. explain the concept of ventilation and diffusion;
6. summarize carbon dioxide transport;
7. summarize oxygen equilibrium and transport;
8. perform calculations related to ventilation and oxygenation;
9. distinguish a shunt, ventilation-perfusion mismatch, shunt-like effect, and deadspace;
10. differentiate between the different types of hypoxia;
11. identify the need, hazards, and correct utilization of high flow oxygen therapy;
12. discuss concepts of ethical principles; and
13. Identify the indications, hazards, and uses of non-invasive positive pressure ventilation.

Major Topics

I. Advanced bronchial hygiene techniques
   A. Chest physiotherapy
   B. Airway care
   C. Suctioning
II. Acid/ Base Balance

III. Ventilation
    A. Primary muscles for ventilation
    B. Pressure gradients
    C. Surface tension
    D. Airway resistance
    E. Compliance
    F. Work
    G. Flow characteristics
    H. Ventilation – perfusion mismatch
    I. Alveolar ventilation
    J. Deadspace ventilation
    K. Lung volumes
    L. Resistance to ventilation
IV. Diffusion
    A. Henry's Law
    B. Graham's Law
V. Carbon dioxide transport
VI. Oxygen Equilibrium and Transport
    A. Alveolar –arterial oxygen difference
    B. Oxyhemoglobin dissociation curve
    C. Oxygen delivery
    D. Arterial – venous oxygen difference
    E. Oxygen consumption
    F. Oxygen extraction ration
    G. Shunt
VII. Hypoxia
VIII. Non-invasive positive pressure ventilation
IX. High flow nasal cannula
X. Ethical principles

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- A minimum of three exams
- A cumulative final exam
- A minimum of one reflective paper
- A minimum of three quizzes
- Participation
- Professionalism

Written Assignments: Students are required to use appropriate academic resources and must use appropriate APA format.

Other Course Information

This course is a Respiratory Care Therapy program core course. This course is offered during the spring semester only.

Date Revised: 11/12/2018