

RCP 114
C-P ANATOMY & PHYSIOLOGY

COURSE DESCRIPTION:

Prerequisites: Enrollment in Respiratory Therapy Program

Corequisites: RCP 110, RCP 113, RCP 132

This course provides a concentrated study of cardiopulmonary anatomy and physiology essential to the practice of respiratory care. Emphasis is placed on cardiovascular and pulmonary physiology, acid/base balance, and blood gas interpretation. Upon completion, students should be able to demonstrate competence in these concepts through written evaluations. Course Hours Per Week: Class, 3. Lab, 0. Semester Hours Credit: 3.

LEARNING OUTCOMES:

At the completion of the course requirements, the student should understand:

- I. The respiratory system
- II. The cardiovascular system
- III. Ventilation
- IV. Gas exchange and transport
- V. Solutions, body fluids, and electrolytes
- VI. Acid-base balance
- VII. The regulations of breathing

OUTLINE OF INSTRUCTION:

- I. The respiratory system
 - a. Anatomy of the respiratory tract
 - b. Pulmonary vascular, lymphatic, and nervous systems
- II. The cardiovascular system
 - a. Functional anatomy
 - b. Control of the cardiovascular system
 - c. Events of the cardiac cycle

III. Ventilation

- a. Mechanics of ventilation
- b. Mechanics of exhalation
- c. Work of breathing
- d. Distribution of ventilation
- e. Efficiency and effectiveness of ventilation

IV. Gas exchange and transport

- a. Diffusion
- b. Normal variations from ideal gas exchange
- c. Oxygen transport
- d. Carbon dioxide transport
- e. Abnormalities of gas exchange and transport

V. Solutions, body fluids, and electrolytes

- a. Solutions
- b. Electrolytic activity and acid-base balance
- c. Body fluids and electrolytes

VI. Acid-base balance

- a. Hydrogen ion regulation in body fluids
- b. Acid excretion
- c. Acid-base disturbances
- d. Clinical acid-base states

VII. The regulations of breathing

- a. Medullary respiratory center
- b. Pontine respiratory center
- c. Reflex control of breathing
- d. Chemical control of breathing
- e. Ventilatory response to exercise
- f. Abnormal breathing patterns
- g. Carbon dioxide and cerebral blood flow

REQUIRED TEXTBOOKS AND MATERIALS:

Textbook to be selected by instructor.

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 919-536-7208 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 10-209.