

**J. Sargeant Reynolds Community College  
Course Content Summary**

**Course Prefix and Number:** RTH 235

**Credits:** 3

**Course Title:** Diagnostic and Therapeutic Procedures II

**Course Description (including lecture hours, lab hours, total contacts)**

Presents the use of multiple diagnostic and therapeutic techniques used in ambulatory and critical care patients. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

**General Course Purpose**

The student will continue to learn and enhance understanding and application of a number of cardiopulmonary diagnostic procedures. A number of outpatient venues will be covered, as well as inpatient situations. Correlation will be made with patient pathophysiology. Decision-making and critical therapist protocols as to which procedures should be recommended and performed will be demonstrated.

**Course Prerequisites/Corequisites**

Completion of the AAS degree program in Respiratory Therapy and CRT credential or CRT eligibility

**Course Objectives**

Upon completing the course, the student will be able to:

- a. Develop further understanding and interpretation of Cardiopulmonary Diagnostic Testing.
- b. Apply this knowledge in a variety of settings, including outpatient diagnostics & critical care.
- c. Enhance his/her ability to perform the correct initial and follow-up assessments of the patients within your scope of care. Educate and assist the patient with plan of care.
- d. Communicate with appropriate correlation to the hospital interdisciplinary team.

**Major Topics to be Included:**

**PART 1: PULMONARY DIAGNOSTICS**

Pulmonary Function-Indications & Calculation of Normal Values

Test Variables

Normal Lung Volume

Practical Applications of Gas Laws in PFT

Types of Spirometers/Problems

Types of Pneumotachs

Gas Analyzers, Components and Calibration

Open Circuit/Closed Circuit Methods for Lung Volume Testing

Body Plethysmography

Closing Volumes

Diffusing Capacity

Density Dependence Testing

Conductance and Methylcholine Challenge, Bronchial Provocation

Pulmonary Exercise Testing

Review of Obstructive vs. Restrictive Disease: Results & Decisions

**PART 2: CARDIAC DIAGNOSTICS**

Cardiac Anatomy/Physiology Review

Conduction of Impulses

Basic ECG Waves  
ECG Measurements  
Ventricular Evaluation  
Axis Deviation  
Interpretation  
Atrial and Ventricular Dysrhythmias  
Basic physics of Ultrasound/doppler  
The cardiac echo-terms and highlights  
Cardiac Echo findings-Important correlation with Respiratory Care (i.e.ventilator)  
Cardiac Stress Testing  
Stress Echo, Transesophageal echo and OR monitoring  
Correlation with Carotid Doppler

**Effective Date of Course Content Summary:** October 20, 2008