



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: RET 2418

COURSE TITLE: CARDIOPULMONARY DIAGNOSTICS

CREDIT HOURS: 2

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 32

Laboratory: 0

Other 0

CONTACT HOURS/WEEK: 2

CATALOG COURSE DESCRIPTION:

This course examines cardiac anatomy, physiology and diseases. Diagnostic procedures include EKGs, cardiac catheterization, CVP, Swan-Ganz and arterial lines, shunt and cardiac output determination. Drugs and other therapeutic regimens are discussed.

Prerequisite: CPT 1200, RET 1485, RET 1832 L

Corequisite: RET 1833L

General Education Requirements - Associate of Arts Degree, meets Area(s): none

General Education Requirements - Associate in Science Degree, meets Area(s): none

UNIT TITLES:

- 1. Cardiac anatomy and physiology**
- 2. EKG interpretation**
- 3. Cardiovascular disorders**
- 4. Invasive diagnostic and therapeutic procedures**

LAST REVIEW Academic Year 2002-03

Interim Revision Dates:

NEXT REVIEW Academic Year 2007-08

I. **Course Overview:**

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

II. **Units:**

Unit 1. Cardiac anatomy and physiology

General Outcome:

- 1.0 The student will describe the anatomy of the heart and the physiologic mechanism necessary to maintain normal cardiac function.

SPECIFIC LEARNING OBJECTIVES:

To successfully complete this module the student will:

- 1.1 Identify the four chambers and the four valves of the heart and locate them on cardiac diagrams
- 1.2 Indicate the role of each of the chambers and valves of the heart in cardiac function
- 1.3 Identify the layers of the cardiac wall
- 1.4 Identify the types of cells which comprise the cardiac muscle
- 1.5 List the normal pressures for each of these areas:

right atrium	left atrium
right ventricle	left ventricle
pulmonary vein	pulmonary artery

Unit 2: EKG Interpretation:

General outcomes:

- 2.0 The student will describe normal EKG tracings and will identify those commonly encountered aberrancies which are presented in this course.

SPECIFIC LEARNING OBJECTIVES:

To successfully complete this module the student will:

- 2.1 trace the normal electrical conduction pathway through the heart
- 2.2 identify the different components of a normal electrocardiographic tracing and describe the relationship each has to the conduction system.
- 2.3 describe the process of depolarization and repolarization as it relates to the cardiac cycle
- 2.4 Identify the following on EKG tracings

- cardiac rate and rhythmicity
- P-R, P-P and R-R intervals
- sinus bradycardia and tachycardia
- atrial flutter and fibrillation
- PAC's, PJC's and PVC's
- 1st, 2nd and 3rd degree heart block
- bigeminy and trigeminy
- right and left bundle branch blocks
- ventricular tachycardia and fibrillation

Unit 3: Cardiovascular Disorders

General outcomes:

- 3.0 The student will describe the pathophysiology and clinical symptoms associated with cardiovascular disorders

SPECIFIC LEARNING OBJECTIVES:

To successfully complete this module the student will:

- 3.1 define and describe the effects of the following:

- systemic hypertension and hypotension
- mitral and aortic valve failure
- pulmonary hypertension
- cardiac hypertrophy
- pulmonary emboli
- cor pulmonale
- ischemia

- 3.2 describe Starling's Law

- 3.3 describe how preload and afterload affect cardiac function

- 3.4 compare and contrast right and left heart failure listing the primary causes and the major physiologic effects of each

- 3.5 describe pulmonary edema, including the etiology, pathophysiology and diagnostic procedures used.

Unit 4: Invasive diagnostic and therapeutic procedures:

General outcomes:

- 4.0 The student will describe the rationale for and the techniques involved in using Swan-Ganz catheters, arterial catheters and aortic balloons.

SPECIFIC LEARNING OBJECTIVES:

To successfully complete this module the student will:

- 4.1 describe the insertion techniques and points of insertion for each of the following:
- aortic balloons
 - Swan-Ganz catheters
 - CVP and arterial lines
- 4.2 list all measurement which can be obtained from each of the devices listed in objective 4.1 and indicate the clinical and diagnostic significance of each of these measurements
- 4.3 List all indications for the use of each of the devices listed in 4.1
- 4.4 List all of the contraindications and hazards to the use of each of the devices listed in 4.1