BROWARD COLLEGE
COURSE OUTLINE

LAST REVIEW: 2009/2010 **NEXT REVIEW:** 2014/2015 **STATUS:**

COURSE TITLE: Pulmonary Function Lab

COMMON COURSE NUMBER: RET2414L

CREDIT HOURS: 1

CLOCK HOURS:

CONTACT HOUR BREAKDOWN

Lecture: Lab: 32
Clinic: Other:

PREREQUISITE(S): RET 2418, RET 1833L

COREQUISITE(S): RET 2414, RET 2714

PRE/COREQUISITE(S):

COURSE DESCRIPTION (This course provides the opportunity to practice the techniques used for spirometric determination of lung volumes and flow rates and the basic principles of cardiopulmonary stress testing.

General Education Requirements – Associate of Arts Degree (AA), meets Area(s): None
General Education Requirements – Associate in Science Degree (AS), meets Area(s): None
General Education Requirements – Associate in Applied Science Degree (AAS), meets Area(s): None

UNIT TITLES

1. **Lung Volumes and Capacities**
2. **Flow Measurement Techniques**
3. **Stress Testing Procedures**

EVALUATION:

This course is based on Pass/Fail. To pass this course, the student will successfully demonstrate performance of basic pulmonary function studies and interpret the results of the studies.

Common Course Number: RET2414l

UNITS

Unit 1 Lung Volumes and Capacities

General Outcome:

1.0 The student shall: Measure and evaluate lung volumes and capacities using spirometry and predictive nomograms.

Specific Measurable Learning Outcomes:
Upon successful completion of this unit, the student shall be able to:

1.1 Perform spirometry to measure all lung volumes and capacities.

1.2 Analyze, calculate and interpret the results of pulmonary function studies.

1.3 Compare the measured values for each of the lung volumes and capacities to predicted values.

1.4 Identify the clinical significance associated with abnormalities in the lung volumes and capacities.

1.5 Identify the following and make conversions from one system to another.
BTPS ATPS ATPD STPD

Unit 2 Flow Measurement Techniques

General Outcome:

2.0 The student shall: Measure and evaluate flow rates using spirometry and predictive nomograms.

Specific Measurable Learning Outcomes:
Upon successful completion of this unit, the student shall be able to:

2.1 **I**dentify the methods used to measure and evaluate airway resistance.

2.2 Perform forced vital capacity, MVV and flow volume loop studies.

2.3 Calculate FEV1, FEV2, FEV3, FEF 25% - 75% and FEF 200 -1200, when given the results of a FVC study.

2.4 Calculate the percentage of the FVC represented by the FEV1, FEV 2 and FEV3 when given the results of a FVC maneuver.

2.5 Calculate PEFR, PIFR, FEF 25, FEF 50, FEF 75, FVC, FEV1 and FEV1/FVC when given the results of a flow volume loop study.

2.6 Analyze and interpret the results of all of the flow studies listed above.

Unit 3 Stress Testing Procedures

General Outcome:

3.0 **The student shall:** perform a cardiopulmonary stress test and will interpret the results of both ventilatory and cardiac profiles.

Specific Measurable Learning Outcomes:
Upon successful completion of this unit, the student shall be able to:

3.1 Perform a cardiopulmonary stress test using Bruce and ramping protocols

3.2 Obtain a complete ventilatory profile during the stress test to include, V02, VC02,RER, VE, respiratory rate, tidal volume, Vd/Vt, 02 pulse and anaerobic threshold

3.3 Obtain a 12 lead EKG tracing during the stress test

3.4 Evaluate EKG changes during the stress test