El Paso Community College Syllabus Part II Official Course Description

SUBJECT AREA	**Respiratory Care Technology**
COURSE RUBRIC AND NUMBER	**RSPT 2358**
COURSE TITLE	**Respiratory Care Patient Assessment**
COURSE CREDIT HOURS	**3 3 : 0**
	Credits Lec Lab

I. Catalog Description

Provides integration of patient examination techniques, including patient history and physical exam, lab studies, x-ray, pulmonary function, arterial blood gases, and invasive and non-invasive hemodynamics. A grade of "C" or better is required in this course to take the next course. **Prerequisite: RSPT 2317. Corequisite: RSPT 2361. (3:0).**

II. Course Objectives

A. Unit I. Patient Medical History and Interview
1. Recognize the importance of properly obtaining and recording history of present illness and chief complaint.
2. Describe the components of a complete health history, to include occupational and social, and the type of information found in each section of the history.
3. Summarize the techniques and barriers used for structuring a patient interview.
4. Define the difference between objective and subjective data and the difference between signs and symptoms.
5. Identify standard infection control procedures needed during patient encounters.
6. Describe the causes and common characteristics of cardiopulmonary symptoms.
7. Summarize the different types of advance directives.

B. Unit II. Physical Exam
1. Describe normal values of the following vital signs and common causes of deviation from normal.
   a. Pulse rate
   b. Respiratory rate
   c. Blood pressure
   d. Body temperature
2. Evaluate patient's level of consciousness.
3. Discuss terms related to physical assessment and general appearance.
4. Describe how to perform the following components on a pulmonary physical examination.
   a. Inspection
   b. Palpation
   c. Percussion
   d. Auscultation

5. Define terms used to describe normal and abnormal lung sounds and the mechanisms responsible for producing those sounds.
6. Identify abnormal breathing patterns and their potential causes.
7. Identify and discuss the four critical life functions
8. Recognize signs and symptoms associated with respiratory distress.

C. Unit III. Lab Studies
1. Discuss the physiology of normal fluid and electrolyte balance.
2. Describe the clinical application and general significance of increases and decreases in electrolyte concentrations, glucose levels, blood urea nitrogen, and creatinine.
3. Describe the composition of blood.
4. Discuss the clinical applications and general clinical significance of increases and decreases for each component of the complete blood count, the reticulocyte count, and erythrocyte sedimentation rate.
5. Discuss abnormalities of hemoglobin, platelets, and leukocytes.
6. Define anemia and identify the most common causes of anemia.
7. Describe lab tests for cardiac function and their use in clinical practice.
8. Explain the indication for other tests such as sputum analysis/culture, urine analysis/culture, skin testing for tuberculosis, and allergy testing.

D. Unit IV. Chest Imaging
1. Describe how the chest radiograph is produced.
2. Define the terms related to chest imaging to include radiolucent and radiopaque.
3. Identify the clinical indications for the chest radiograph examination.
4. Discuss different types of radiograph orientations and their indications.
5. Recognize the proper technique for performing a systematic descriptive interpretation of the chest radiograph to include identification of anatomic landmarks of the thorax.
6. Identify the correct position for the following:
   a. Endotracheal/tracheostomy tube placement
   b. Pacemaker wires/electrodes
   c. Pulmonary artery catheters
   d. Central venous catheters
   e. Chest tubes
   f. Nasogastric tubes
7. Differentiate between abnormal and normal chest radiograph as related to pulmonary disease.
8. Explain the indications for other imaging and diagnostic studies such as
   a. CT
   b. MRI
   c. PET scan
   d. V/Q scan
   e. Barium swallow
   f. Chest ultrasound
   g. Bronchography
   h. Electroencephalography (EEG)
   i. Pulmonary angiography
   j. Echocardiogram
   k. Cardiac catheterization
   l. Intracranial pressure (ICP) monitoring
   m. Exhaled gas analysis

E. Unit V. Pulmonary Function
1. Define and cite typical values for and differentiate among the lung volumes and capacities.
2. Specify the indications and contraindications for basic spirometry.
3. Identify the necessary calibration tests and accuracy standards for spirometry equipment and procedural elements required to obtain accurate spirometry data.
4. Given a subject's basic spirometry test parameters, classify the results as representing

normal function or an obstructive or restrictive impairment.

5. Describe the two different types of pressure measuring devices.
6. Identify the equipment needed and indications for the following:
   a. MIP/MEP
   b. Vital Capacity (VC)
   c. Forced Vital Capacity (FVC)
   d. Flowrates
   e. Pre-post bronchodilator testing
   f. Flow-Volume Loop
   g. Maximum Voluntary Ventilation (MVV)
   h. FRC measurement
   i. Gas Diffusing Capacity (DLco)
   j. Methacholine bronchoprovocation

F. Unit VI. Arterial Blood Gases
1. Identify indications and reference ranges for both arterial blood gas and oximetry parameters.
2. Outline and explain the key procedural elements in obtaining arterial blood samples by means of puncture and indwelling arterial line.
3. Apply knowledge of the factors affecting hemoglobin saturation to interpretation of oximetry data.
4. Apply common indices of oxygenation to assess the cause and severity of hypoxemia.
5. Describe the common causes, compensatory mechanisms, and expected blood gas findings seen in simple respiratory and metabolic acid-base disorders.
6. Describe the common causes and expected blood gas findings seen in combined and mixed acid-base disorders.
7. Identify the common pre-analytic, analytic, and post-analytic errors in blood gas analysis.
8. Accurately interpret arterial blood gas and/or oximetry data.

G. Unit VII. Invasive and Non-invasive Hemodynamic Monitoring
1. Identify the heart's anatomy and circulation.
2. Describe and evaluate the following:
   a. Arterial pressure monitoring
   b. Central venous pressure monitoring
   c. Pulmonary artery pressure monitoring
3. Define cardiac output, cardiac index, stroke volume, and venous return.
4. List the most important factors that regulate cardiac preload, afterload, and contractility.
5. Calculate compliance, airway resistance, systemic vascular resistance, pulmonary vascular resistance, and oxygen delivery.
6. Discuss transcutaneous $P0_2$ and $PC0_2$ monitoring, capnography, and pulse oximetry.

III. THECB Learning Outcomes (WECM)

1. Interpret patient history and physical exam.
2. Evaluate lab studies, x-rays, pulmonary function, arterial blood gases, and invasive and noninvasive hemodynamics.

IV. Evaluation

A. Evaluation Weighs:

6 Unit Tests	60%
1 Comprehensive Final	20%
Homework, Quizzes	20%
	100%

B. Grading Scale:

93 to 100	A
86 to 92	B
78 to 85	C
70 to 77	D
69 or below	I or F

I= Incomplete
W= Withdrew or Withdrawn

*Grades resulting in a decimal fraction of 0.5 or greater will be rounded off to the next whole number.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.