Description: This module focuses on the concept of acid-base balance. This module will be at level NUR 112 and will focus on the care of patients with respiratory and metabolic acidosis, and respiratory and metabolic alkalosis.

Learning Outcomes:

Upon completion of this module the student will be able to:

1. Discuss hydrogen ion balance, physiology and homeostatic mechanisms.
2. Explain the role of the respiratory system and the urinary system in regulating hydrogen ion balance.
3. Differentiate acidosis from alkalosis.
4. Describe each of the major acid-base imbalances, including the cause, pathophysiology, clinical manifestations, related diagnostic tests and medical management.
   a. Respiratory acidosis
   b. Metabolic acidosis
   c. Respiratory alkalosis
   d. Metabolic alkalosis
5. Interpret arterial blood gas results using the 5-step approach.
6. Apply the nursing process in the management of patients with acid-base imbalances across the lifespan:
   a. Assessment
   b. Diagnosis
   c. Planning
   d. Implementation
   e. Evaluation
7. State three nursing diagnoses and related expected patient outcomes commonly applicable to patients with fluid, electrolyte, and acid-base imbalances.
8. Describe five nursing interventions and their rationales that commonly apply to patients with fluid, electrolyte, and acid-base imbalances.
9. Explain the basis for evaluation of nursing care provided to patients with fluid, electrolyte, and acid-base imbalances.
**Learning Resources:**

Lippincott Review Series: Fluid and Electrolytes  

[www.dalesplace.net/lab_values](http://www.dalesplace.net/lab_values)  
[http://www.acid-base.com](http://www.acid-base.com)

**Learning Activities:**

Lecture - Discussion  
Discussion Board (Blackboard)  
Completion of ABG worksheet and crossword Puzzle on Acid-Base Balance  
Case Studies – Critical Thinking in Medical-Surgical Nursing pp. 117-121, 141-143.  
Clinical application. Assign students to patients with hydrogen ion imbalances.  

**Evaluation:**

Test on acid-base imbalances.  
Graded concept map, patient data base and nursing care plan based on assigned patient during clinical.  
Graded ABG worksheet.