



### **Course Description**

#### **MLT1610 | Clinical Chemistry 1 | 2.00 credits**

Theoretical concepts and principles of carbohydrate, non-protein nitrogen, and electrolyte chemistry analyses with emphasis on their relationships to various disease states. Analytical procedures to assess liver function and acid-base balance are also included. Prerequisite: CHM1025; corequisite: MLT1610L.

### **Course Competencies:**

**Competency 1:** The student will demonstrate knowledge of the principles and practices of clinical chemistry by:

1. Describing the basic concepts, components and methods for Quality Control
2. Describing the different types of safety hazards encountered in Clinical Chemistry
3. Determining common sources of error in Clinical Chemistry Analysis
4. Selecting proper specimens for analysis in Clinical Chemistry

**Competency 2:** The student will demonstrate knowledge of different laboratory analytes by:

1. Explaining the clinical significance of the following:
  - a. glucose
  - b. glycosylated hemoglobin
  - c. blood urea nitrogen
  - d. creatinine
  - e. uric acid
  - f. electrolytes
  - g. blood gasses
  - h. phosphorus
  - i. magnesium
  - j. ammonia
  - k. Trace elements
  - l. iron and iron binding capacity

**Competency 3:** The student will demonstrate an understanding of Pathophysiology by:

1. Explaining the functions, ailments and laboratory tests used to diagnose the following:
  - a. Diabetes
  - b. Kidney Disease
  - c. Water, Electrolyte Balance
  - d. Acid Base Balance

### **Learning Outcomes:**

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Demonstrate knowledge of ethical thinking and its application to issues in society
- Create strategies that can be used to fulfill personal, civic, and social responsibilities
- Use computer and emerging technologies effectively