

Common Course Outline

MLTC 200

Clinical Chemistry

4 Credits

Community College of Baltimore County

Description

MLTC 200 – Clinical Chemistry presents the analysis of the chemical constituents of blood and includes specimen collection and processing, correlation of normal and pathologic physiology, and diagnostic implications in health and disease. Laboratory exercises emphasize analytical accuracy and precision, using both manual techniques and automated laboratory instruments.

4 Credits: 3 lecture hours, 3 laboratory hours

Prerequisites: MLTC 101; Admission to the Medical Laboratory Technology Program

Overall Course Objectives

Upon completion of this course students will be able to:

1. describe the relationship of biochemical analytes in the clinical setting to both the pathology and the physiology of the human body;
2. describe the requirements for collection, storage and handling methods of specimens and the adverse changes that can result if specimens are improperly collected or stored;
3. explain the principles and methodologies of the diagnostic tests performed in the clinical chemistry laboratories to identify normal and disease processes;
4. correlate laboratory test results from serum with normal and disease processes;
5. perform and interpret manual chemistry tests;
6. identify pre-analytic variables that adversely affect procedures and results;
7. evaluate quality control procedures use in chemistry testing; and
8. demonstrate laboratory safety and standard precautions.

Major Topics

- I. Quality control and statistics
- II. Techniques and instrumentation
- III. Amino acids and proteins, including enzymes
- IV. Carbohydrates
- V. Lipids and lipoproteins
- VI. Nonprotein nitrogen
- VII. Electrolytes
- VIII. Blood gases, pH, buffer systems
- IX. Liver function
- X. Endocrinology

- XI. Cardiac function
- XII. Renal function
- XIII. Toxicology and therapeutic drug monitoring

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- A minimum of three (3) graded case studies
- Weekly laboratory assignments
- Weekly quizzes and assignments
- A minimum of three (3) lecture exams
- A minimum of two (2) laboratory proficiencies
- Professionalism
- A cumulative final examination

Written Assignments: Students are required to use appropriate academic resources.

Other Course Information

This course is a Medical Laboratory Technology program core course.

This course is part of a program sequence that requires admission to the program.

This course offered in the fall only.

Date Revised: 01/09/2018