

**SOUTHEAST COMMUNITY COLLEGE
HEALTH SCIENCES DIVISION
MEDICAL LABORATORY TECHNOLOGY
Revision Date: 11/2025**

I. CATALOG DESCRIPTION

Course Number: MEDT 2120
Course Title: Medical Laboratory Chemistry 2
Prerequisite(s): MEDT 2110

Catalog Description: Study of theory and application of clinical chemistry normal and disease states and normal and abnormal constituents of urine. Skills and laboratory techniques corresponding to theoretical information presented in lecture. Laboratory is concurrent with lecture.

Credit Hours: 2
Class Hours: 15
Lab Hours: 45
Total Contact Hours: 60

II. COURSE OBJECTIVES *Course will:*

1. Provide advanced study in the theory and application of clinical chemistry procedures.
2. Familiarize the student with the theory and clinical application of electrolytes, acid-base balance, body fluid analysis, therapeutic drug monitoring, and toxicology.
3. Provide practice performing chemistry analyses and body fluid analyses.
4. Require application of critical thinking.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. STUDENT LEARNING OUTCOMES *Student will be able to:*

1. Attain skill in performing routine clinical chemistry procedures.
2. Describe the principles of instrumentation used in the clinical chemistry laboratory.
3. Describe the principles of chemical reactions for the analysis of specific body constituents.
4. Define and discuss the metabolism, clinical significance, and measurement of major and minor electrolytes, hormones, therapeutic drugs, and drugs of abuse.
5. Discuss acid-base balance within the body, define the terms and relationships associated with acid-base balance, and explain the normal physiological mechanisms for maintain acid-base balance.
6. Identify, describe, and discuss the various types of body fluids and analysis of the various body fluids.
7. Perform clinical chemistry procedures.
8. Demonstrate cooperation when working with others.

9. Describe the clinical tests used to assess liver function
10. Explain the physiology and metabolism of the liver and bilirubin.

B. GENERAL EDUCATION LEARNING OUTCOMES

1. GELO #3: Critical Thinking & Problem Solving

Outcomes:

1. Collect, identify, interpret and analyze data.
4. Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.

IV. CONTENT/TOPICAL OUTLINE

- A. Sodium, Potassium, and Chloride
- B. Calcium, Phosphorus, Magnesium, Iron and Trace Elements
- C. Acid-Base Balance
- D. Endocrine Function
- E. Analysis of Other Body Fluids
- F. Therapeutic Drug Monitoring and Drugs of Abuse
- G. Toxicology
- H. Miscellaneous Topics in Clinical Chemistry
- I. Liver Function

V. INSTRUCTIONAL MATERIALS

- A. **Required Text(s):**
Brunzel, Nancy A. *Fundamentals of Urine and Body Fluid Analysis* (latest ed. found in CID)
Bishop, M. *Clinical Chemistry Principles, Techniques, and Correlation* (latest ed. found in CID)
- B. **Other Required Resources:**
Packet of Handouts

VI. METHODS OF PRESENTATION/INSTRUCTION

Methods of presentation/instruction include a combination of the following:

1. In-person and recorded lectures and videos
2. In-person and recorded laboratory demonstrations and videos
3. Hands-on activities
4. Role play
5. Online resources
6. Guest presentations
7. Case studies

VII. METHODS OF EVALUATION

- A. Methods of evaluation typically include a combination of assignments, quizzes, exams, projects, laboratory competencies, etc. For grading expectations please see the course information document.

SCC STANDARD GRADING SCALE POLICY:

A+	95-100	C+	75-79
A	90-94	C	70-74
B+	85-89	D+	65-69
B	80-84	D	60-64
		F	Below 60

VIII. SPECIFIC COURSE REQUIREMENTS

A. ATTENDANCE

Attendance is crucial to the success of this course. The attendance policy can be found in the MLT Student Handbook.

B. OTHER

Please see the Course Information Document for course policies related to grading, expectations, assignments, assessment, and participation.