

## Medical Laboratory Tech (MDLT)

### MDLT 2150 Hematology and Coagulation

(TAG) 5 Credits

*Prerequisite:* admission to Medical Laboratory Technology program or permission of program director.

This course presents hematological and coagulation theory and practice. It focuses on analysis of red blood cells and white blood cells, normal and abnormal cellular maturation and function, anemia and leukemia, and the coagulation pathway. Laboratory experience includes complete blood counts, normal and abnormal differentials, and coagulation procedures. Students will learn how to correlate laboratory results with disease states.

(9 contact hours: 3 lecture, 6 lab)

### MDLT 2151 Blood Collection Techniques

1 Credit

*Prerequisite:* MDLT 2150 (can be taken concurrently) or admission to the Medical Assisting program or permission of the MDLT program director.

This course introduces students to theory and practice of blood collection. It focuses on the phlebotomy process and the role of the laboratorian in the pre-analytical process. Laboratory experience includes phlebotomy techniques. Students will learn how to correlate laboratory results with errors in the pre-analytical process.

(1.6 contact hours: 0.7 lecture, 0.9 lab)

### MDLT 2152 Urinalysis

(TAG) 1 Credit

*Prerequisite:* MDLT 2150 (can be taken concurrently) or permission of program director.

This course presents the theoretical and practical aspects of urinalysis. The laboratory portion of the course includes physical, chemical, and microscopic urinalysis procedures. Students will learn how to correlate laboratory results with disease states.

(1.6 contact hours: 0.7 lecture, 0.9 lab)

### MDLT 2153 Body Fluid Analysis

(TAG) 1 Credit

*Prerequisite:* MDLT 2150 (can be taken concurrently) or permission of program director.

This course presents the theoretical and practical aspects of body fluid analysis. The laboratory portion of the course includes body fluid cell counts and cell identification. Students will learn how to correlate laboratory results with disease states.

(1.6 contact hours: 0.7 lecture, 0.9 lab)

### MDLT 2250 Clinical Immunology

3 Credits

*Prerequisite:* admission to Medical Laboratory Technology or Histotechnology program; or permission of program director.

This course covers the human immune system, including the characteristics of antigens and antibodies, cellular interactions, and types of immune response and complement. It also addresses infectious diseases and the body's immunological response to them, along with autoimmune and immune deficiency disorders and hypersensitivity. Laboratory procedures include agglutination reactions, precipitation reactions, labeled immunoassays, immunofixation electrophoresis, and molecular diagnostic techniques. Students will learn to correlate laboratory results with disease states.

(5 contact hours: 2 lecture, 3 lab)

### MDLT 2350 Immunohematology

4 Credits

*Prerequisite:* MDLT 2250 (can be taken concurrently).

This course specializes in the study of blood grouping systems and includes the principles involved in the transfusion of blood and blood products. Laboratory procedures include blood typing, antibody identification, and antiglobulin and compatibility testing. Students will learn how to correlate laboratory results with disease states.

(8 contact hours: 2 lecture, 6 lab)

### MDLT 2550 Clinical Chemistry

5 Credits

*Prerequisite:* CHEM 1150.

This course specializes in the measurement of chemical components in the blood for the purpose of diagnosis, prognosis, and the treatment of disease. It emphasizes analytical principles, sources of error, and quality control. Laboratory procedures include analysis of proteins, carbohydrates, enzymes, lipids, and electrolytes. Students will learn to correlate laboratory results with disease states.

(9 contact hours: 3 lecture, 6 lab)

### MDLT 2650 Clinical Microbiology

5 Credits

*Prerequisite:* BIOL 2700.

This course specializes in clinical bacteriology, including the various families and genera of gram positive and gram negative bacteria and the common features of the important species within each group. Students will study medical fungi and parasites. Laboratory procedures include specimen collection and processing as well as the identification of disease-causing organisms, according to their colonial morphology, growth characteristics, and biochemical reactions. Students will learn to differentiate normal flora from potential pathogens related to specific body sites.

(9 contact hours: 3 lecture, 6 lab)

**MDLT 2750 Clinical Directed Practicum****6 Credits**

*Prerequisite: MDLT 2150, MDLT 2151, MDLT 2152, MDLT 2153, MDLT 2250, MDLT 2350, MDLT 2550, MDLT 2650, MDLT 2850 (must be taken concurrently).*

This course includes practical application of procedures previously learned through the study of hematology, immunohematology, chemistry, microbiology, coagulation, and urinalysis. Students will gain experience in laboratory procedures as performed in the hospital clinic laboratory or associated facilities.

(30 contact hours: 30 clinical)

**MDLT 2850 Medical Laboratory Technology Seminar****2 Credits**

*Prerequisite: MDLT 2150, MDLT 2151, MDLT 2152, MDLT 2153, MDLT 2250, MDLT 2350, MDLT 2550, MDLT 2650, MDLT 2750 (must be taken concurrently).*

This course specializes in issues and trends in medical laboratory technology, healthcare ethics and law, government regulations, professional development, employment opportunities, interviewing techniques, resume writing, and job seeking skills. It uses case studies to integrate previous course work with clinical experience.

(2 contact hours)