

MEDICAL LABORATORY TECHNOLOGY (MLT)

102 Hematology

4 credit hours

Offered spring semester. Two hours lecture and four hours laboratory a week. Fee: \$115.00.

This course is designed to provide instruction on the theory in normal blood cell production, hematopoiesis, as well as blood and bone marrow disorders such as leukemia/anemia. In addition, the coagulation of blood, hemostasis, is also presented. Students will perform cell counts, differentials and coagulation tests.

Prerequisite: Admission to the Medical Laboratory Technology program or consent of instructor.

104 Applied Immunology

3 credit hours

Offered spring semester. Three hours lecture and application a week. Fee: \$130.00.

This course will include a study of the basic principles of human immunity system and the role of the immune system in health and disease. Students will study and be given the opportunity to perform and evaluate techniques and applications of immunochemistry which are used in medical diagnostics and biotechnology.

Prerequisite: Admission into the Medical Laboratory Technology program or consent of instructor.

106 Clinical Laboratory Mathematics and Quality System Assessment

1 credit hour

Offered summer session. One hour of lecture/laboratory per week. Fee: \$50.00.

This course provides a review of arithmetic, algebra, scientific notation, rounding and figure significance, measurement systems and conversions, solutions and concentrations, dilutions, titers and other mathematic calculations commonly used in the clinical laboratory setting. This course includes the principles and practices of quality control and quality assurance used in clinical laboratory science.

Prerequisites or Co-requisites: Admission into the Medical Laboratory Technology Program, Mathematics 102 or 109, or consent of instructor.

110 Orientation to the Clinical Laboratory (Phlebotomy/Laboratory Assistant 110)

1 credit hour

Offered fall and spring semesters. Fee: \$50.00.

This course will introduce students to laboratory medicine including an overview of each area within the laboratory and the types of patient testing performed in each area. Students will learn about the OSHA safety precautions and regulatory considerations applicable to clinical laboratories in the US. Students will also identify the organizations representing the profession and the certification/licensure requirements and career opportunities in acute and ambulatory care laboratories. Students will be given instruction on basic laboratory techniques such as specimen processing and use of a centrifuge, microscope, and autoclave. Students will tour a clinical laboratory as part of the course experience.

Prerequisite: Successful completion of English 92 or the appropriate corresponding score on the reading portion of the placement assessment.

206 Biotechnology

4 credit hours

Offered fall semester. Three hours lecture and three hours laboratory a week. Fee: \$100.00.

Theory and techniques commonly used in biotechnology will be explored. Theory topics include structure, function, and synthesis of DNA, RNA, and protein and the conceptual bases of molecular biology techniques, including gel electrophoresis, plasmid preparation, transformation of cells, nucleic acid manipulation, blotting and probing techniques, polymerase chain reaction, and protein purification.

Prerequisite: Medical Laboratory Technology 114, Biological Science 101, Chemistry 100 or 101, and Mathematics 102 or 119, or consent of instructor.

210 Clinical Practicum

12 credit hours

Offered spring semester. 448 hours of clinic/practicum. Fee: \$420.00. Nurse Managed Wellness Clinic Fee: \$60.00. Clinical Edoc Fee: \$85.00.

Study and supervised practice in affiliated clinical laboratories. Pass-fail grading.

Prerequisite: Admission to the Medical Laboratory Technology Program or consent of instructor.

220 Biotechnology Internship

11 credit hours

Two internship sites of two hundred clock hours each and one internship site of one hundred twenty clock hours.

An internship of 450 clock hours in supervised scientific experiences in biotechnology production, manufacturing, environmental or research. The internship is customized to match the students' interests.

221 Urinalysis and Body Fluids

2 credit hours

Offered summer session. Three hours lecture and two hours laboratory a week for 5 weeks. Fee: \$100.00.

This course presents a study of kidney structure and function including the formation of urine as well as diseases of the kidney. Through lecture and laboratory sessions the student will gain experience in the detection of physical, chemical and microscopic properties of urine in normal and abnormal states. The course also includes the study of miscellaneous fluid analysis, cerebrospinal fluid analysis, and fecal analysis. Principles of safety, quality control and quality assurance as appropriate to urine and body fluid analysis are also included in the course.

Prerequisite: Admission to the Medical Laboratory Technology Program or consent of instructor.

222 Blood Banking

4 credit hours

Offered summer session. Nine hours lecture and six hours laboratory a week for five weeks. Fee: \$130.00.

This course provides instruction on the fundamentals of blood grouping and typing, compatibility testing, antibody screening, component preparation, donor selection, and transfusion reactions and investigation. Blood banking procedures, including ABO grouping, Rh typing, detection and identification of antibodies, ant globulin testing, and compatibility testing are performed.

Prerequisite: Admission to the Medical Laboratory Technology Program or consent of instructor.

223 Clinical Microbiology

6 credit hours

Offered fall semester. Four and a half hours lecture and five hours laboratory a week. Fee: \$250.00.

This course includes a study of the theory, methods, and pathological processes in medical microbiology. Instruction will include the setup of cultures, identification of organisms, susceptibility testing, automation, and reporting procedures. Principles of safety, quality control and quality assurance as appropriate to clinical microbiology analysis are also included in the course.

The agents most often implicated as causing disease in patients, such as the gram positive and negative cocci and gram negative rods, are included. Study of the medically important fungi and parasites, miscellaneous and unclassified bacteria, mycobacteria and viruses are also included in this course. Antimicrobial susceptibility testing, anaerobic bacteria studies and automated techniques utilized in microbiology are included.

Prerequisite: Admission to the Medical Laboratory Technology program or consent of instructor.

224 Clinical Chemistry **4 credit hours**

Offered fall semester. Three hours lecture per week and two and a half hours of laboratory a week. Fee: \$130.00.

This course provides instruction in the concepts of Clinical Chemistry. Emphasis is on clinical tests which evaluate the function of body systems: protein metabolism and clinical enzymes, the renal system, liver function, carbohydrate and lipid metabolism, electrolytes and acid-base balance, the cardiac and respiratory systems, the endocrine system as well as testing for therapeutic and abusive drug levels. Analytes and lab results are correlated to normal homeostasis and disease. Laboratory work includes the theory, operation and maintenance of the specialized and semi-automated analytical instrumentation used to perform these tests.

Prerequisite: Admission to the Medical Laboratory Technology program or consent of instructor.

299 Independent Study in Medical Laboratory Technology **1-4 credit hours**

This course is designed to allow the student to do independent research in the field of Medical Laboratory Technology under the guidance of a certified Medical Laboratory Scientist, Histologist, or Pathologist and supervised by an MLT faculty member. May be repeated for up to 4 credits.

Prerequisite: Instructor consent required.