

Medical Laboratory Technician

10-513-1 Associate Degree (two-year)

Financial Aid Eligible

Campus: New Richmond

*Combination of On Site and Online instruction

** Students in selected health sciences programs will travel to the Shell Lake Health Education Center. Travel requirements are customized to meet individual program course competencies.

Program Overview

At career entry, the medical laboratory technician will be able to perform routine clinical laboratory tests (such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, molecular, and other emerging diagnostics) as the primary analyst making specimen oriented decisions on predetermined criteria, including a working knowledge of critical values. Communications skills will extend to frequent interactions with members of the healthcare team, external relations, customer service and patient education. The level of analysis ranges from waived and point of care testing to complex testing encompassing all major areas of the medical laboratory. The medical laboratory technician will have diverse functions in areas of preanalytical, analytical, post-analytical processes. The medical laboratory technician will have responsibilities for information processing, training, and quality control monitoring wherever medical laboratory testing is performed.

Admission Requirements

- Complete Online application form
- Have earned a high school diploma or GED certificate; current high school seniors must provide both a current high school transcript and a final (official) transcript with confer date
- Review and sign Background Check Disclosure
- Review and sign Functional Abilities Disclosure
- Complete one year, or one credit, of high school chemistry or one credit of college-level chemistry with a 2.0 or better.
- Complete admissions meeting with a Northwood Tech counselor (academic admission requirements apply - see page 33 for more information)

Program-Specific Requirements

- Submit Background Check Fee
- Have acceptable results based on the Wisconsin Caregiver Background Check, National Criminal Background Check, Minnesota Caregiver Background Check (if applicable), and other states, if applicable
- Pass a physical exam, have current immunizations, and demonstrate negative status for Tuberculosis (Tb)
- COVID vaccination---highly recommended
NOTE: Northwood Technical College cannot guarantee clinical placement or ability to progress in the program if a student is not able to meet the clinical site requirements including but not limited to; influenza vaccine, covid vaccine, negative tb skin test or QuantiFERON®-TB Gold In-Tube test (QFT-GIT) or T-SPOT®.TB test (T-Spot), up to date acceptable background check, or any other clinical requirements required by the clinical site. Northwood Technical College cannot guarantee clinical placement if the clinical site must be changed due to students inability to meet the site specific requirements. Many sites require the student information 4-6 weeks prior to the clinical start date.
- Review and sign Health Sciences Confidentiality Statement
- Possess current certification of "BLS Basic Life Support"

- Participate in a mandatory session scheduled prior to the start of classes.

Program Outcomes

Medical Laboratory Technician graduates will be able to:

- Practice laboratory safety and regulatory compliance
- Collect and process biological specimens
- Monitor and evaluate quality control in the laboratory
- Apply modern clinical methodologies including problem solving and troubleshooting according to predetermined criteria
- Correlate laboratory results to diagnosis of clinical conditions and/or diseases
- Perform information processing in the clinical laboratory
- Model professional behaviors, ethics, and appearance

Career Outlook

Graduates of this program will be qualified for the following positions:

- Medical Laboratory Technician
- Clinical Laboratory Technician
- Physician Office Laboratory Technician
- Pathology Research Assistant
- Quality Control Technician
- Research Technician
- Phlebotomist
- Genetic Lab Technician
- Industrial Laboratory Technician
- Agribusiness Laboratory Technician

Related Program

- Phlebotomy

Accreditation

This program is seeking accreditation by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119, phone 773-714-8880.



Required Courses

Number	Course Title	Credits (cr.)
Program Courses		
10513109	Blood Bank*	4 cr.
10513110	Basic Lab Skills	1 cr.
10513111	Phlebotomy*	2 cr.
10513113	QA Lab Math	1 cr.
10513114	Urinalysis*	2 cr.
10513115	Basic Immunology Concepts*	2 cr.
10513116	Clinical Chemistry*	4 cr.
10513120	Basic Hematology*	3 cr.
10513121	Coagulation*	1 cr.
10513130	Advanced Hematology*	2 cr.
10513133	Clinical Microbiology*	4 cr.
10513140	Advanced Microbiology*	2 cr.
10513141	Pre-Clinical Experience*	2 cr.
10513151	Clinical Experience 1*	3 cr.
10513152	Clinical Experience 2*	4 cr.
10513160	MLT Seminar*	1 cr.
10513170	Introduction to Molecular Diagnostics*	2 cr.
Program Courses Total		40 cr.
General Education Courses**		
10801136	English Composition 1	3 cr.
10801196	Oral/Interpersonal Communication	3 cr.
10806177	General Anatomy and Physiology	4 cr.
10806186	Intro to Biochemistry*	4 cr.
10806197	Microbiology*	4 cr.
10809172	Introduction to Diversity Studies	3 cr.
10809198	Introduction to Psychology	3 cr.
General Education Courses Total		24 cr.
TOTAL CREDITS		64 cr.

* Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.

You must earn a grade point of 2.0 or better in all required courses.

Course repeat policies exist that allow for only a certain number of retakes within this program; please refer to the policies for details.

** See pages 38-41 for course descriptions.

The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

2024/2025

Course Descriptions

(See pages 38-41 for General Education course descriptions)

10513109

Blood Bank - Credits: 4

Focuses on blood banking concepts and procedures including blood typing, compatibility testing, work ups for adverse reaction to transfusions, disease states and donor activities. COREQUISITE: 10513115 Basic Immunology Concepts. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513110

Basic Lab Skills - Credits: 1

This course explores health career options and the fundamental principles and procedures performed in the clinical laboratory. You will utilize medical terminology and basic laboratory equipment. You will follow required safety and infection control procedures and perform simple laboratory tests. PREREQUISITE: Admission to the Phlebotomy Certificate or Medical Laboratory Technician program. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513111

Phlebotomy - Credits: 2

This course provides opportunities for learners to perform routine venipuncture, routine capillary puncture and special collection procedures. PREREQUISITE: Admission to the Phlebotomy Certificate or Medical Laboratory Technician program and COREQUISITE: 10513110 Basic Lab Skills. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513113

QA Lab Math - Credits: 1

Focuses on performing the mathematical calculations routinely used in laboratory settings. You will explore the concepts of quality control and quality assurance in the laboratory. PREREQUISITE: Admission to the Medical Laboratory Technician program. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513114

Urinalysis - Credits: 2

Prepares you to perform a complete urinalysis which includes physical, chemical and microscopic analysis. You will explore renal physiology and correlate urinalysis results with clinical conditions. PREREQUISITES: 10513110 Basic Lab Skills, 10806177 General Anatomy and Physiology and Admission to the Medical Laboratory Technician program. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513115

Basic Immunology Concepts - Credits: 2

Provides an overview of the immune system including laboratory testing methods for diagnosis of immune system disorders, viral and bacterial infections. PREREQUISITES: 10513110 Basic Lab Skills, 10806177 General Anatomy and Physiology and COREQUISITE: 10513109 Blood Bank. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513116

Clinical Chemistry - Credits: 4

Introduces clinical chemistry techniques and procedures for routine analysis using photometric, potentiometric and separation techniques. Topics in this course include pathophysiology and methodologies for carbohydrate, lipids, proteins, renal function and blood gas analysis. Additional topics include hepatic, cardiac markers, tumor markers, endocrine function, miscellaneous body fluids, toxicology, enzymes and electrolytes. PREREQUISITES: 10806186 Intro to Biochemistry and Admission to the Medical Laboratory Technician program. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513120

Basic Hematology - Credits: 3

Covers the theory and principles of blood cell production and function, and introduces you to basic practices and procedures in the hematology laboratory. PREREQUISITES: 10513110 Basic Lab Skills, 10806177 General Anatomy and Physiology, and Admission to the Medical Laboratory Technician program. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513121

Coagulation - Credits: 1

Introduces the theory and principles of coagulation and explores mechanisms involved in coagulation disorders. Emphasis is placed upon laboratory techniques used to diagnose disease and monitor treatment. PREREQUISITES: 10513110 Basic Lab Skills, 10806177 General Anatomy and Physiology and COREQUISITE: 10513120 Basic Hematology. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513130

Advanced Hematology - Credits: 2

Explores mechanisms involved in the development of hematological disorders. Emphasis is placed upon laboratory techniques used to diagnose disorders and monitor treatment. PREREQUISITE: 10513120 Basic Hematology. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513133

Clinical Microbiology - Credits: 4

Presents the clinical importance of infectious diseases with emphasis upon the appropriate collection, handling and identification of clinically relevant bacteria. Disease states, modes of transmission and methods of prevention and control, including antibiotic susceptibility testing, will also be discussed. PREREQUISITE: 10806197 Microbiology and COREQUISITE: 10513170 Introduction to Molecular Diagnostics. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513140

Advanced Microbiology - Credits: 2

Provides an overview of acid fast organisms, fungi, parasites, and anaerobic bacteria. The organisms, their pathophysiology, epidemiology, the diseases and conditions that they cause, laboratory methods of handling, culturing and identification will be discussed. PREREQUISITE: 10513133 Clinical Microbiology. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513141

Pre-Clinical Experience - Credits: 2

Focuses on students utilizing prior course work and laboratory techniques to analyze specimens and correlate patient history in a mock laboratory setting. This includes practicing infection control and safety, medical terminology, healthcare ethics, venipuncture technique, specimen processing, and quality assurance. PREREQUISITE: All required courses with a grade point of 2.0 or better. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513151

Clinical Experience 1 - Credits: 3

Practice the principles and procedures of laboratory medicine as an entry level Medical Laboratory Technician (MLT) in a clinical laboratory setting. Working alongside laboratory professionals, you will collect and process specimens, operate laboratory analyzers and instruments and report results in a Laboratory Information Systems. PREREQUISITE: All required courses with a grade point of 2.0 or better. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513152

Clinical Experience 2 - Credits: 4

Provides continuing practice for the principles and procedures of laboratory medicine as an entry level Clinical Laboratory Technician in a clinical laboratory setting. You will learn to operate state of the art instruments and report results on Laboratory Information Systems. PREREQUISITE: All required courses with a grade point of 2.0 or better. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513160

MLT Seminar - Credits: 1

Focuses on preparing students to enter the medical or medical lab workforce including resume writing, interview skills, and Board of Certification exam preparation. PREREQUISITE: All required courses with a grade point of 2.0 or better. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.

10513170

Introduction to Molecular Diagnostics - Credits: 2

Introduces the principles and application of molecular diagnostics in the clinical laboratory. PREREQUISITE: 10513110 Basic Lab Skills and COREQUISITE: 10513133 Clinical Microbiology. The Medical Laboratory Technician program is supported with \$200,000 in WTCS Grant Funds.