

## Degree Description

Accredited by the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Road, Suite 720, Rosemont, IL 60018-5119), www.naacls.org, 773-714-8880

Medical laboratory technicians (MLTs) are vital healthcare detectives, uncovering and providing laboratory information from laboratory analyses that assist physicians in patient diagnosis and treatment, as well as in disease monitoring or prevention. MLTs are competent in the collection, processing and analysis of biological specimens, the performance of lab procedures, the maintenance of instruments, and relating lab findings to common diseases/conditions. We use sophisticated biomedical instrumentation and technology, computers, and methods requiring manual dexterity to perform laboratory testing on blood and body fluids. Laboratory testing encompasses such disciplines as clinical chemistry, hematology, immunology, immunohematology, microbiology, and molecular biology.

Graduates of the Medical Laboratory Technician program are eligible to take a national certification examination.

The MLT may secure employment in hospitals, clinics, and other diagnostic laboratories, as well as in industry.

A student has five years to complete the technical curriculum after official enrollment in the first program course. Contact the program director for more information.

Marketable skills include:

1. Graduates will provide quality care by demonstrating the ability to perform and report testing accurately in a laboratory setting.
2. Graduates will demonstrate honesty, integrity and patient confidentiality relating to patient test results and patient outcomes.
3. Graduates will demonstrate the ability to think critically by identifying and solving problems that arise relating to patient test results, instrument malfunctions and/or quality control issues.
4. Graduates will participate in professional development activities in order to maintain their certification as required by the American Society of Clinical Pathologist and to remain current in the profession.
5. Graduates will communicate effectively in the healthcare or other laboratory settings.

<b>Semester I</b>	<b>Hours</b>
<a href="#">ENGL 1301 Composition I</a>	3 hours
<a href="#">BIOL 2401 Anatomy &amp; Physiology I</a>	4 hours
<a href="#">CHEM 1405 Introductory Chemistry I</a>	4 hours
<a href="#">PSYC 2301 General Psychology</a> <i>or</i> <a href="#">SOC 1301 Introduction to Sociology</a>	3 hours
	<b>14 hours</b>

<b>Semester II</b>	<b>Hours</b>
<a href="#">BIOL 2402 Anatomy &amp; Physiology II</a>	4 hours
<a href="#">SPCH 1311 Introduction to Speech Communication</a> <i>or</i> <a href="#">SPCH 1315 Public Speaking</a> <i>or</i> <a href="#">SPCH 1318 Interpersonal Communication</a>	3 hours
<a href="#">BIOL 2420 Microbiology for Non-Science Majors</a>	4 hours
<a href="#">MATH 1314 College Algebra</a> <i>or</i> <a href="#">MATH 1342 Elementary Statistical Methods</a>	3 hours
	<b>14 hours</b>

<b>Semester III</b>	<b>Hours</b>
<a href="#">MLAB 1227 Coagulation</a>	2 hours
<a href="#">MLAB 1415 Hematology</a>	4 hours
<a href="#">MLAB 2431 Immunohematology</a>	4 hours
<a href="#">MLAB 1235 Immunology/Serology</a>	2 hours
<a href="#">MLAB 1167 Practicum/Field Experience-Clinical/MLT</a>	1 hours
	<b>13 hours</b>

<b>Semester IV</b>	<b>Hours</b>
<a href="#">MLAB 1211 Urinalysis &amp; Body Fluids</a>	2 hours
<a href="#">MLAB 2401 Clinical Chemistry</a>	4 hours
<a href="#">MLAB 2534 Clinical Microbiology</a>	5 hours
<a href="#">MLAB 2266 Practicum/Field Experience-Clinical/MLT</a>	2 hours
	<b>13 hours</b>

<b>Summer Semester</b>	<b>Hours</b>
<a href="#">MLAB 2265 Practicum/Field Experience- Clinical MLT</a>	2 hours
<a href="#">MLAB 2232 Seminar in MLT/Assistant</a>	2 hours
<a href="#">MLAB 2238 Advanced Topics in MLT/Assistant</a>	2 hours
	<b>6 hours</b>

**Total hours: 60 hours**

## Course Descriptions

### ENGL 1301 Composition I

Intensive study of and practice in writing processes, from invention and researching to drafting, revising, and editing, both individually and collaboratively. Emphasis is on effective rhetorical choices, including audience, purpose, arrangement, and style. Focus is on writing the academic essay as a vehicle for learning, communication, and critical analysis. Note: ENGL 1301 is a pre-requisite for all 2000-level literature courses. Prerequisite: TSI complete in Writing or the equivalent. Semester Hours 3 (3 lec)

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### BIOL 2401 Anatomy & Physiology I

Anatomy and Physiology I is the first part of a two-course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, and nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. NOTE: Must have passed the reading and writing portion of the TSI Assessment or have credit for INRW 0302 or INRW 0402. Semester Hours 4 (3 lec/3 lab)

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### CHEM 1405 Introductory Chemistry I

Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. Semester Hours 4 (3 lec/3 lab)

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### PSYC 2301 General Psychology

General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. NOTE: Must have passed the reading portion of the TSI Assessment or have credit for INRW 0302 or INRW 0402. Semester Hours 3 (3 lec)

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### SOCI 1301 Introduction to Sociology

The scientific study of human society, including ways in which groups, social institutions, and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts, and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity, and deviance. Semester Hours 3 (3 lec)

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### BIOL 2402 Anatomy & Physiology II

Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Prerequisite: BIOL 2401 with a grade of C or better. Semester Hours 4(3 lec/3 lab)

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### SPCH 1311 Introduction to Speech Communication

Introduces basic human communication principles and theories embedded in a variety of contexts, including interpersonal, small group, and public speaking. Semester Hours 3 (3 lec)

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### SPCH 1315 Public Speaking

Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations. Semester Hours 3 (3 lec)

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### SPCH 1318 Interpersonal Communication

Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts, including friendships, romantic partners, families, and relationships with co-workers and supervisors. Semester Hours 3 (3 lec)

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### BIOL 2420 Microbiology for Non-Science Majors

This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health. Prerequisite: BIOL 1406, 1408, 1409, 2401 or 2404 with a grade of C or better. Semester Hours 4 (3 lec/3 lab)

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### MATH 1314 College Algebra

In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included. Graphing calculator required. Prerequisite: TSI math complete or MATH 0311. Semester Hours 3 (3 lec)

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### MATH 1342 Elementary Statistical Methods

Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended. Graphing calculator required. Prerequisite: TSI math complete or MATH 0308 or completion of college-level math course. Semester Hours 3 (3 lec)

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### MLAB 1227 Coagulation

A course in coagulation theory, procedures, and practical applications. Includes quality control, quality assurance, safety and laboratory procedures which rely on commonly performed manual and/or semi-automated methods. Utilizes a student laboratory for experiences in basic coagulation procedures. Prerequisites: Admission to the Medical Laboratory Technician program and approval by the program director. Semester Hours 2 (1 lec/2 lab)

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### MLAB 1415 Hematology

The study of blood cells in normal and abnormal conditions. Instruction in the theory and practical application of hematology procedures, including quality control, quality assurance, safety, manual and/or automated methods as well as blood cell maturation sequences, and normal and abnormal morphology with associated diseases. Utilizes a student laboratory for experiences in basic hematology procedures. Prerequisites: Admission to the Medical Laboratory Technician program and approval by the program director. Semester Hours 4 (2 lec/4 lab)

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### MLAB 2431 Immunohematology

A study of blood antigens and antibodies. Presents quality control, basic laboratory technique and safety. Includes the principles, procedures and clinical significance of test results in genetics, blood group systems, pre-transfusion testing, adverse effects of transfusions, donor selection and components, and hemolytic disease of the newborn. Utilizes a student laboratory for experiences in basic immunohematology procedures. Prerequisites: MLAB 1235, admission to the Medical Laboratory Technician Program and approval by the program director. Semester Hours 4 (2 lec/4 lab)

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### MLAB 1235 Immunology/Serology

An introduction to the theory and application of basic immunology, including the immune response, principles of antigen-antibody reactions, and the principles of serological procedures as well as quality control, quality assurance, and safety. Utilizes a student laboratory for experiences in basic immunology/ serology procedures. Prerequisites: Admission to the Medical Laboratory Technician program and approval by the program director. Semester Hours 2 (1 lec/2 lab)

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### **MLAB 1167 Practicum/Field Experience-Clinical/MLT**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: Admission into the MLT AAS program. Completion of all immunization requirements; acceptable background check and drug screen results. Corequisites: Concurrent enrollment in MLAB 1227, MLAB 1415, MLAB 2431, and MLAB 1235. Semester Hours 1 (7 clinical hours/week)

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### **MLAB 1211 Urinalysis & Body Fluids**

An introduction to the study of urine and body fluid analysis. Includes the anatomy and physiology of the kidney, physical, chemical and microscopic examination of urine, cerebrospinal fluid, and other body fluids as well as quality control, quality assurance and safety. Utilizes a student laboratory for experiences in basic urinalysis and body fluids analysis. Prerequisites: Admission to the Medical Laboratory Technician program and approval by the program director as well as successful completion of all previous semesters of MLAB courses with a grade of C or better. Semester Hours 2 (1 lec/2 lab)

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### **MLAB 2401 Clinical Chemistry**

An introduction to the principles, procedures, physiological basis, and significance of testing performed in Clinical Chemistry. Includes quality control, reference values, and safety. Utilizes a student laboratory for experiences in basic clinical chemistry procedures. Prerequisites: Successful completion of all previous semesters of MLAB courses with a grade of C or better. Semester Hours 4 (3 lec/3 lab)

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### **MLAB 2534 Clinical Microbiology**

Instruction in the theory, practical application, and pathogenesis of clinical microbiology, including collection, quality control, quality assurance, safety, setup, identification, susceptibility testing, and reporting results. Semester Hours: 5 (4 lec/2 lab)

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### **MLAB 2266 Practicum/Field Experience-Clinical/MLT**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: Successful completion of MLAB 1227, MLAB 1415, MLAB 2431, MLAB 1235, and MLAB 1167 with a minimum grade of C or better. Semester hours: 2 (14 clinical hours/week)

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### **MLAB 2265 Practicum/Field Experience- Clinical MLT**

Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: Successful completion of all MLAB courses in the first two semesters of the Medical Laboratory Technician program. Semester Hours: 2 (14 clinical hours/week)

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### **MLAB 2232 Seminar in MLT/Assistant**

Designed to reinforce didactic information with laboratory methodologies and to allow exploration of advanced techniques in medical laboratory technology. Prerequisites: Successful completion of all MLAB courses in the first two semesters of the Medical Laboratory Technician program. Semester Hours: 2 (2 lec)

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### **MLAB 2238 Advanced Topics in MLT/Assistant**

This course examines the integration of all areas of the clinical laboratory and correlates laboratory test data with diagnostic applications and pathophysiology using critical thinking skills. Prerequisites: Successful completion of all MLAB courses in the first two semesters of the Medical Laboratory Technician program. Semester Hours: 2 (2 lec)

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