

University of New Haven

Medical Laboratory Science Graduate Student Handbook

2024-2025 Academic Year

REVISIONS

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**University of
New Haven**

**SCHOOL OF
HEALTH SCIENCES**

**Medical Laboratory
Science Program**

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INTRODUCTION

Purpose of the MLS Student Handbook

The purpose of the Student Handbook is to bring together all the various policies and procedures that specifically apply for students in the University of New Haven's (UNewHaven) Medical Laboratory Sciences (MLS) Program. Please refer to the [University of New Haven Student Handbook](#) for general University policies. This MLS handbook does not replace any official University policy, publication, or procedure. All students must be familiar with and follow all rules and regulations of the University.

The student is responsible for completing all courses necessary to successfully satisfy the requirements of the Medical Laboratory Science Program and completing all forms, applications, and University requirements for graduation. The Medical Laboratory Science Program cannot and will not take responsibility for the student meeting all requirements and deadlines.

The policies, procedures, and program requirements outlined in this handbook are in effect as of Fall 2024 (**latest update: 2024-2025 academic year**). Entering students are responsible for program requirements in effect at the time of initial enrollment. Policies and procedures are subject to change and are communicated to all Medical Laboratory Sciences students upon approval by the MLS faculty.

Note: *The content of the MLS Student Handbook may change at any time. The department faculty reserves the right to make changes and give public notification of such as deemed necessary.*

The most up-to-date version of the MLS Student Handbook can be found here: [UNH MLS Student Handbook](#)

Introduction to the School of Health Sciences

The School of Health Sciences (SHS) at the University of New Haven is a regional destination and nationally recognized provider of quality health professions education. The School of Health Sciences at the University of New Haven prepares students to develop the competencies necessary to be a successful healthcare professional in the 21st century. The signature of a University of New Haven School of Health Sciences education is our commitment to competency-based education assessed through hands-on learning experiences in simulated and real-world healthcare settings. Students learn and grow through health career exploration, interprofessional education, and hands-on experiences. Our curriculum is focused on healthcare innovation, systems thinking, and using evidence-based approaches to solve today's biggest challenges in healthcare which gives students the tools to succeed in today's complex healthcare environment.

Mission

The School of Health Sciences' mission is to **educate competent, caring health professionals** by delivering innovative, interdisciplinary healthcare education and services.

Vision

The School of Health Sciences aims to become a **regionally and nationally recognized** provider of health education and services at the **forefront of health professional education for the 21st century**.

Organizational Structure

The School of Health Sciences consists of three operational units as follows:

- The Department of Allied Health
- The Department of Population Health & Leadership
- The Department of Rehabilitation Sciences and Wellness

The MLS program is a part of the department of Allied Health.

Introduction to the UNewHaven MS Medical Laboratory Science Program

<https://www.newhaven.edu/health-sciences/graduate-programs/medical-laboratory-science/index.php>

In keeping with the university mission statement, the Medical Laboratory Science (MLS) program is a professional program that serves individuals who are seeking healthcare careers that develop their naturally scientific, analytical, and curious nature. The curriculum consists of basic science, general education, and profession-specific courses that include experiential, collaborative, and discovery-based learning.

The UNewHaven MLS program was developed in response to the shortage of medical laboratory scientists in Connecticut and in the nation at large and at the request of multiple local area hospitals and health systems that continue to experience very high vacancy rates in their medical laboratories. With the support of the community, the MLS program seeks to contribute academically prepared graduates with entry level technical competency and professional behaviors, as a solution to the national shortage of clinical laboratory professionals.

Medical Laboratory Science is a growing field with continued unprecedented demand for graduates. It is anticipated that the Medical Laboratory Science field will grow by 5% between 2022 and 2032 ([US Bureau of Labor Statistics](#)). The continued need for properly-trained laboratory professionals is undeniable; there is an ever increasing demand for laboratory services. The sophistication, complexity, and volume of medical laboratory tests also continues to grow. Although automation of many medical laboratory tasks has taken place, there is still a strong need for graduates who have the analytical, laboratory, and clinical knowledge to effectively work in and manage clinical laboratories.

PROGRAM ACCREDITATION

This program is **fully accredited** by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), awarded in April 2023 for a period of 5 years.



National Accrediting Agency for Clinical Laboratory Sciences

5600 N. River Rd, Suite 720

Rosemont IL 60018-5119

phone: (773) 714-8880

fax: (773) 714-8886

email: info@naacls.org

OVERVIEW OF THE PROFESSION

There are currently over 300,000 medical laboratory scientists (MLS) [*also known as clinical laboratory scientists (CLS) or medical technologists (MT)*] in the United States, making it one of the largest employers in healthcare. Laboratory scientists play a significant role in the diagnosis, treatment, and management of patients and they perform complex testing using sophisticated instruments to detect diseases and monitor treatment.

NAACLS Description of the Medical Laboratory Scientist profession

The medical laboratory scientist is qualified by academic and applied science education to provide service and research in clinical laboratory science and related areas in rapidly changing and dynamic healthcare delivery systems. Medical laboratory scientists perform, develop, evaluate, correlate, and assure accuracy and validity of laboratory information; direct and supervise clinical laboratory resources and operations; and collaborate in the diagnosis and treatment of patients. The medical laboratory scientist has diverse and multi-level functions in the principles, methodologies and performance of assays; problem-solving; troubleshooting techniques; interpretation and evaluation of clinical procedures and results; statistical approaches to data evaluation; principles and practices of quality assurance/quality improvement; and continuous assessment of laboratory services for all major areas practiced in the contemporary clinical laboratory.

Medical laboratory scientists possess the skills necessary for financial, operations, marketing, and human resource management of the clinical laboratory.

Medical laboratory scientists practice independently and collaboratively, being responsible for their own actions, as defined by the profession. They have the requisite knowledge and skills to educate laboratory professionals, other health care professionals, and others in laboratory practice as well as the public.

The ability to relate to people, a capacity for calm and reasoned judgment and a demonstration of commitment to the patient are essential qualities. Communications skills extend to consultative interactions with members of the healthcare team, external relations, customer service and patient education.

Medical laboratory scientists demonstrate ethical and moral attitudes and principles that are necessary for gaining and maintaining the confidence of patients, professional associates, and the community.

NAACLS Description of Entry Level Competencies of the Medical Laboratory Scientist

At entry level, the medical laboratory scientist will possess the **entry level competencies** necessary **to perform** the full range of clinical laboratory tests in areas such as clinical chemistry, hematology/hemostasis, immunology, immunohematology/transfusion medicine, microbiology, urine and body fluid analysis, laboratory operations, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms.

The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed.

At entry level, the medical laboratory scientist will have the following basic knowledge and skills in:

- A. Application of safety and governmental regulations and standards as applied to clinical laboratory science.
- B. Principles and practices of professional conduct and the significance of continuing professional development.
- C. Communications sufficient to serve the needs of patients, the public, and members of the healthcare team.
- D. Principles and practices of administration and supervision as applied to clinical laboratory science.
- E. Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services.
- F. Principles and practices of clinical study design, implementation, and dissemination of results.

American Society for Clinical Laboratory Science (ASCLS) – Code of Ethics

Preamble

The Code of Ethics of the American Society for Clinical Laboratory Science sets forth the principles and standards by which Medical Laboratory Professionals and students admitted to professional education programs practice their profession.

I. Duty to the Patient

Medical Laboratory Professionals' primary duty is to the patient, placing the welfare of the patient above their own needs and desires and ensuring that each patient receives the highest quality of care according to current standards of practice. High quality laboratory services are safe, effective, efficient, timely, equitable, and patient-centered. Medical Laboratory Professionals work with all patients and all patient samples without regard to disease state, ethnicity, race, religion, or sexual orientation. Medical Laboratory Professionals prevent and avoid conflicts of interest that undermine the best interests of patients.

Medical Laboratory Professionals are accountable for the quality and integrity of the laboratory services they provide. This obligation includes maintaining the highest level of individual competence as patient needs change, yet practicing within the limits of their level of practice. Medical Laboratory Professionals exercise sound judgment in all aspects of laboratory services they provide. Furthermore, Medical Laboratory Professionals safeguard patients from others' incompetent or illegal practice through identification and appropriate reporting of instances where the integrity and high quality of laboratory services have been breached.

Medical Laboratory Professionals maintain strict confidentiality of patient information and test results. They safeguard the dignity and privacy of patients and provide accurate information to patients and other healthcare professionals. Medical Laboratory Professionals respect patients' rights to make decisions regarding their own medical care.

II. Duty to Colleagues and the Profession

Medical Laboratory Professionals uphold the dignity and respect of the profession and maintain a reputation of honesty, integrity, competence, and reliability. Medical Laboratory Professionals contribute to the advancement of the profession by improving and disseminating the body of knowledge, adopting scientific advances that benefit the patient, maintaining high standards of practice and education, and seeking fair socioeconomic working conditions for members of the profession.

Medical Laboratory Professionals accept the responsibility to establish the qualifications for entry to the profession, to implement those qualifications through participation in licensing and certification programs, to uphold those qualifications in hiring practices, and to recruit and educate students in accredited programs to achieve those qualifications.

Medical Laboratory Professionals establish cooperative, honest, and respectful working relationships within the clinical laboratory and with all members of the healthcare team with the primary objective of ensuring a high standard of care for the patients they serve.

III. Duty to Society

As practitioners of an autonomous profession, Medical Laboratory Professionals have the responsibility to contribute from their sphere of professional competence to the general well-being of society. Medical Laboratory Professionals serve as patient advocates. They apply their expertise to improve patient healthcare outcomes by eliminating barriers to access to laboratory services and promoting equitable distribution of healthcare resources.

Medical Laboratory Professionals comply with relevant laws and regulations pertaining to the practice of Clinical Laboratory Science and actively seek to change those laws and regulations that do not meet the high standards of care and practice.

ASCLS Pledge to the Profession

As a Medical Laboratory Professional, I pledge to uphold my duty to Patients, the Profession and Society by:

- Placing patients' welfare above my own needs and desires.
- Ensuring that each patient receives care that is safe, effective, efficient, timely, equitable and patient-centered.
- Maintaining the dignity and respect for my profession.
- Promoting the advancement of my profession.
- Ensuring collegial relationships within the clinical laboratory and with other patient care providers.
- Improving access to laboratory services.
- Promoting equitable distribution of healthcare resources.
- Complying with laws and regulations and protecting patients from others' incompetent or illegal practice
- Changing conditions where necessary to advance the best interests of patients.

UNewHAVEN MLS PROGRAM DESCRIPTION

Graduates of the MS-MLS program will be prepared to work in clinical laboratories, hospitals, urgent care clinics, doctor's offices, blood banks, fertility centers, government service (such as the public health department), and medical manufacturing and supply companies. They will also be qualified to work in veterinary laboratories, technical sales, instrument service, management, teaching, and technical medical writing. Since the curriculum will emphasize an understanding of laboratory methods and diagnostic interpretation, graduates of the UNewHaven MLS program may also qualify for entry into a variety of other graduate degree programs, including doctorate of clinical laboratory science (DCLS), pathologists' assistant, physician assistant, or medical school training.

UNewHAVEN MLS program mission is to provide a rigorous, competitive, entry-level training program to prepare graduates to become competent medical laboratory scientists who demonstrate ethical standards and promote patient-centered care.

UNewHAVEN MLS program vision is to become a destination program for medical laboratory science in the region recognized for quality faculty, strong industry partnerships, and successful graduates. All graduates from the MLS program will become competent, ethical, certified MLS professionals prepared to become an essential member of the healthcare team.

Program Outcomes

After completing this program, students will:

1. Demonstrate mastery of theoretical knowledge & readiness to pass the ASCP certification exam.
2. Perform practical skills based on entry level competencies in each clinical discipline.
3. Demonstrate effective skills in communication, systematic thought, and writing.
4. Apply positive professional ethics, attitudes, and practices.
5. Apply research skills applicable to medical laboratory diagnostics and the improvement of patient care.
6. Justify a commitment to lifelong learning and professional development.

UNewHaven MLS Program Objectives

Professional Communication: To interact and communicate effectively by presenting information in oral and written formats; collaborate with professionals, peers, and clients; express ideas clearly; and give and receive feedback to serve the needs of patients, the public, and members of the healthcare team.

Professional Competence: To possess knowledge, skills, and abilities to acquire an entry level position as a Medical Laboratory Scientist, and to successfully complete the ASCP BOC MLS examination.

Professional Ethics and Conduct: To learn to treat patients and colleagues with respect, care, and thoughtfulness; to perform duties in an accurate, precise, timely, and responsible manner; to maintain strict confidentiality of patient information and test results; and to exercise professional judgment, skill, and care while meeting established standards of the MLS profession.

Professional and Personal Development: To continuously improve and apply medical laboratory skills and knowledge and share such with colleagues, other members of the healthcare community, and the public.

Who This Program is Intended For

The MS in Medical Laboratory Science graduate program is designed for individuals holding a Bachelor of Science in biology, chemistry, or a related major and who are not certified medical technologists or medical laboratory scientists but who desire a career in the clinical laboratory sciences. Medical laboratory scientists are trained to work in clinical chemistry, hematology, immunohematology, immunology, and microbiology with various sub-specialties in each of those major areas. Our graduate program of study consists of 53 credits of coursework designed to provide the knowledge and technical skills necessary to qualify an individual for work in a diagnostic clinical laboratory, in research, or in industry. Students will complete two years of professional medical laboratory science coursework, spanning all areas of the laboratory. The professional course work includes didactic courses, student laboratory instruction, and clinical experience rotations.

Graduation from the MLS program is not contingent upon passing any external certification or licensure exam.

[2024-2025 GR Academic Catalog Listing](#)

STEM Designation: This program is STEM (science, technology, engineering, and math)-designated by the Department of Homeland Security. For more information, please see <https://www.newhaven.edu/admissions/stem-designated-programs.php>

The MS in Medical Laboratory Science graduate program is designed for individuals holding a Bachelor of Science in biology, chemistry, or a related major and who are not certified medical technologists or medical laboratory scientists but who desire a career in the clinical laboratory sciences. Medical laboratory scientists are trained to work in clinical chemistry, hematology, immunohematology, immunology, and microbiology with various sub-specialties in each of those major areas. Our graduate program of study consists of 53 credits of coursework designed to provide the knowledge and technical skills necessary to qualify an individual for work in a diagnostic clinical laboratory.

Students will complete two years of professional medical laboratory science coursework, spanning all areas of the laboratory. The professional course work includes didactic courses, student laboratory instruction, and clinical experience rotations. Upon completion of the program, students are eligible to sit for the ASCP BOC exam to become a board-certified medical laboratory scientist.

Students must complete a capstone project, which will be developed in MLSC 6651 in the fall of the second year and completed in MLSC 6652 in the spring of the second year. This course provides an opportunity for students to integrate their knowledge and experience into a culminating research project, clinical project, or practical experience. Students will demonstrate connections between concepts and skills encountered in previous health related coursework to their capstone project and experiences. Students are required to complete all clinical courses in their final year of the program with a B- or better. This includes MLSC 6631, MLSC 6641, MLSC 6642, MLSC 6643, and MLSC 6644. Students must also complete a comprehensive exam in MLSC 6631 with a grade of 80% or better.

The Medical Laboratory Science program has a goal to prepare competent, entry-level ASCP-certified Medical Laboratory Scientists. NAACLS accreditation requires that the program achieve a 75% ASCP-BOC passage rate and a 70% graduation rate.

ADMISSION REQUIREMENTS

For a full description of program admissions and special requirements, see Appendix A

Prerequisites for Admission to the MS in MLS

As part of the admission process to the graduate MLS program, students will have completed, at minimum, the following coursework:

- One semester of general biology with laboratory (4 credits)
- One semester of general microbiology with laboratory (4 credits)
- Two semesters of general chemistry with laboratory (8 credits)
- One semester organic chemistry and/or one semester of biochemistry (4-8 credits)
- One semester of human physiology, with or without a laboratory component (3-4 credits)
- One semester of college algebra or pre-calculus (3-4 credits)
- One semester of introductory statistics or biostatistics (3-4 credits)

PROGRAM REQUIREMENTS

An undergraduate GPA of 2.7 and successful completion of all prerequisites are recommended for entry into the graduate MLS program. Students in the MS-MLS program must maintain a 3.0 GPA or above for placement in the clinical rotations.

Students must complete a capstone project, which will be developed in MLSC 6651 in the second-to-last semester of the program and completed in MLSC 6652 in the final semester of enrollment (concurrent with the clinical rotation experience). This course provides an opportunity for students to integrate their knowledge and experience into a culminating research project, clinical project, or practical experience. Students will demonstrate connections between concepts and skills encountered in previous health related coursework to their capstone project and experiences. Students are required to complete all clinical courses in their final year of the program with a B or better. This includes MLSC 6631, MLSC 6641, MLSC 6642, MLSC 6643 and MLSC 6644. Students must also complete a comprehensive exam in MLSC 6631 with a grade of 80% or better.

The UNewHaven MLS program has a goal to prepare competent, entry-level Medical Laboratory Scientists. NAACLS accreditation requires that the program achieve a 75% ASCP-BOC passage rate and a 70% graduation rate (for students who begin the final year of the degree program). Failure to pass the comprehensive exam and to pass the clinical rotations are grounds for dismissal from the program. Dismissal from the MLS Program is not equivalent to dismissal from the university. The student may appeal through the University's grievance procedure. The student may reapply to the MLS Program for the possibility of admittance into a future cohort.

Program Curriculum

The following list describes the prerequisite courses as well as the courses required for the MS MLS major.

List of Prerequisite Courses Credit Hours

BIOL 3311/3313	Molecular Biology	4
BIOL 3301	Microbiology	3

*The above undergraduate courses are not included in the MS in MLS program; however, either these courses or ones with equivalent content must be completed **prior to graduation** from the program.*

List of Major Required Courses Credit Hours

MLSC 6600	Phlebotomy and Sample Processing	2
MLSC 6601	Clinical Immunology and Serology with Lab	4
MLSC 6610	Laboratory Operations, Regulation, and Compliance	4
MLSC 6611	Clinical Chemistry	4
MLSC 6612	Immunohematology and Transfusion Medicine	3
MLSC 6613	Clinical Bacteriology for Medical Laboratory Science	4
MLSC 6614	Hematology with Laboratory	4
MLSC 6615	Clinical Mycology, Parasitology, and Virology	3
MLSC 6616	Blood coagulation, Hemostasis and Urinalysis w/lab	4
MLSC 6631	Clinical Seminar	2
MLSC 6641	Clinical Practicum I – Clinical Chemistry	2
MLSC 6642	Clinical Practicum II – Hematology	2
MLSC 6643	Clinical Practicum III – Transfusion Services	2
MLSC 6644	Clinical Practicum IV – Clinical Microbiology	2
MLSC 6651	Graduate Capstone Project I	3
MLSC 6652	Graduate Capstone Project II	3

REQUIRED ELECTIVES: Six credits of PUBH or HCAD electives or other graduate level coursework as approved by advisor

See Appendix D for course descriptions.

Additional Requirements

Clinically intensive programs utilize several off-site facilities to support a wide variety of clinical experience. Transportation to and from these sites is the responsibility of the student.

CastleBranch Fees

Students in health sciences programs will be required to submit proof of participation in interprofessional educational programs. The University of New Haven works with an external vendor, CastleBranch, to facilitate the monitoring of this work. Students work with CastleBranch directly and pay them directly for any necessary services. The one-time cost for monitoring of IPE services will be \$28, with clinical health sciences programs utilizing additional CastleBranch services. (See individual programs for additional fees and services).

Background Checks, Drug Screens, and Immunizations

Internships and clinical sites frequently require students to complete a criminal background check or drugs-of-abuse screening in order to be placed at their facility. These may be completed by placing an order through CastleBranch; the cost of these services is paid directly to CastleBranch. Failure to satisfy the background check or drug screening may result in disqualification from clinical participation, which in turn may prevent progression through the Program and ultimately in dismissal from the Program.

If a student disagrees with the accuracy of the information obtained in the background check, they may request a confirmatory test and/or a review of the accuracy of the background information within five (5) business days. All requests must be made in writing to the Program Director and must include relevant information supporting the request. The Standards Committee, in coordination with a liaison from the clinical affiliate, will review the results and render a final decision regarding the student's eligibility for participation in the clinical experience. Notification of decision will be made by the Program Director via certified letter with copy to the students' University of New Haven email address.

Students are also responsible for submitting any required health and immunization records prior to the start of the clinical education component. Students are responsible for the cost associated in obtaining background clearance and necessary health requirements.

Exposure to Bloodborne Pathogens

Exposures to blood and other body fluids occur across a wide variety of occupations. Health care workers can be exposed to blood through needlesticks and other sharps injuries, mucous membranes, and skin exposures. The pathogens of primary concern are the human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV).

During both on-campus student laboratory experiences and off-campus clinical rotation experiences, students will be handling and working with blood and other bodily fluids. These substances should always be handled according to [Standard Precautions](#). Refer to the university's [Environmental Health and Safety](#) policies or the program-level safety procedures for more information.

Technical Standards

Admitted students must meet the technical standards/essential functions of their program of study. Technical standards establish essential qualities necessary to achieve the skills, knowledge, and competencies for entry-level practitioners as well as meet the expectations of the program's accrediting agency. All students must meet the established abilities and expectations. If a student is unable to fulfill the technical standards/essential functions, with or without accommodations, the student may be dismissed from the program.

Tuition & Fees

Academic tuition and fees are based on enrollment status and number of credit hours. The Bursar's Office is responsible for all aspects of tuition billing, payment processing, and refunds. The Bursar's Office is located within the One Stop Student Financial and Registrar Services Office. The One Stop provides a centralized and efficient customer experience while assisting students and their families with their student billing, financial aid, and registrar questions.

Lab fees are used to support courses requiring specialized materials and/or a specialized learning environment. If there is no laboratory component associated with a course, a lab fee may still be assessed if specific supplies are needed to operate the class or to support licensing and certification course delivery. Lab fees are noted on the Academic Schedule.

The student will be responsible for the costs associated with uniforms, equipment, state and national testing and maintenance of associated licenses and certifications.

Information on Tuition & Fees can be found on the University of New Haven's website at <https://www.newhaven.edu/about/departments/bursars/tuition/index.php>.

Medical Requirements

All students are required to show proof of the following immunizations prior to entering the University, and therefore must also provide copy to the Program Director upon request:

- Proof of two (2) MMR's. The first injection after your first birthday (as long as the first injection is after 1/1/69 or thereafter) and a booster injection, or proof of immunity by blood test.
- Varicella (chickenpox): (1) two valid doses of injection or (2) date of disease or (3) blood test proving immunity.
 - Blood Test providing proof of immunity is also acceptable.
- All students living in campus housing must also provide documentation of a valid meningitis vaccine. Students will not be permitted to move into residence halls without providing proof of vaccination to Health Services. Note: Any meningitis vaccine given more than 5 years prior to arrival on campus, will require students to obtain a meningitis booster.
- A meningitis vaccination is also required of all University of New Haven athletes (even if they are not living on campus).
- Athletes must also show Sickle Cell Testing Results according to compliancy with NCAA.

Students must be in good physical and mental health in order to meet physical performance standards and possess the clarity of mind necessary for health care duties. As a clinical program, students must also comply with vaccination requirements of clinical sites, which may be different from those of the university.

All medical records will be maintained in confidence and cannot be released without the consent of the student.

Health Insurance

All full-time undergraduate students are required to have health insurance. The University of New Haven offers student health insurance for those who do not have private insurance. Information about the University student health insurance program and the online waiver system for those who have private insurance can be located in the Bursar's Office webpage.

For specific questions regarding health insurance, contact Health Services at 203.932.7079.

Professional Liability Insurance

Each student is provided professional liability insurance through the University of New Haven that applies to clinical/field/internship rotations. These coverages are up to \$1,000,000 each claim and up to \$3,000,000 aggregate (total). The proof of insurance will be provided upon request. No cost is incurred by the student.

Classroom Supplies & Expectations

Students are expected to have available note taking materials, including electronic and paper materials. Prior to the start of each term, students must arrange to have access to all textbook and electronic course content through publisher and University learning management systems identified on the course syllabi and course catalog.

Further, students are expected to:

- Have the required computer software, technology, and high-speed internet access.
- Login to the university learning management system and university email account regularly to read announcements, respond to requests, complete activities and assignments, and participate fully in all program activities.
- Develop a time-management strategy recognizing this program will require significant commitment from each student. It is estimated that over a full semester, a student will spend 3 to 4 hours of work per week for each course credit (e.g., three (3) credit hours is a minimum of nine (9) hours of work/study time).
- Maintain a study schedule during intersession and summer semesters, recognizing paramedicine requires continued preparation and review of curriculum.
- Allow for completion of pre-clinical and clinical requirements which may take place outside the traditional academic calendar.

Grading Policy

Grading in the MLS program is defined by the following domains:

- Cognitive: includes written or computerized tests, quizzes, checklists, worksheets, case studies, presentations, and/or reports used to assess the student's knowledge of the subject area.
- Psychomotor: includes technical skills judged by performance on a combination of practical exercises and exams, image exams, completion of procedures, checklists, worksheets, or other assignments.
- Affective: includes evaluation of behaviors like attendance and participation as well as formal evaluation using a behavior-based rating scale like that on the Affective Evaluation form.

All final course grades for MLS Program courses will be assigned based on the following scale:

Undergraduate and Graduate Scales

*Final Grades are assigned with the following scale:

GRADING SCALE			
Grades Scored Between (%)			Letter Equivalent
93.0	to	100	A
90.0	to	Less than 93	A-
87.0	to	Less than 90	B+
83.0	to	Less than 87	B
80.0	to	Less than 83	B-
77.0	to	Less than 80	C+
73.0	to	Less than 77	C
Less than 73%			F*

*Failure to achieve the minimum standard in any MLS program course will earn an F (Failure) grade for the course.

In order to continue in the Medical Laboratory Science Program, students **must meet the minimum standard of 73% [C]** or better in all MLS courses, including the didactic and laboratory components. Earning below a 73% in this course will mean the student has failed the course.

A. For all MLSC lecture courses (with or without a laboratory component; graduate and undergraduate):

The final cumulative written exam will cover all materials addressed throughout the course and must be passed with a [C] minimum (73% or better) to pass the course for program credit.

B. For all MLSC Clinical Practicum courses (graduate and undergraduate):

The final practical exam will cover required program competencies and must be passed with a [C] minimum (73% or better) to pass the course for program credit.

C. For Clinical Seminar courses ONLY (MLSC 4410, MLSC 4420, MLSC 6631, MLSC 6632):

The final practice certification exam will cover all materials from program courses and must be passed with a [B-] minimum (80% or better) to pass the course for program credit.

University Academic Policies can be found in the current academic catalog. The “Grade Point Average,” “Grading System,” and “Academic Standing and Dismissal” policies are excerpted directly from the 2024-2025 Academic Catalog.

[2024-2025 GR Academic Catalog Listing](#)

Grade Point Average

The academic standing of each student is determined on the basis of the grade point average (GPA) earned each term. Each letter grade is assigned a quality point value, as described in the section "Graduate Grading System."

To obtain the GPA, multiply the quality point value of each grade by the number of credits assigned to each course; then divide the sum of the quality points earned by the number of credits attempted (in courses for which a grade of A through C- or F is awarded). A cumulative GPA is obtained by calculating the GPA for all courses taken at the University of New Haven.

Graduate Grading System

Graduate programs use the following grading system:

Superior Performance:

A 4.00 quality points

A- 3.70 quality points

Good Performance:

B+ 3.30 quality points

B 3.00 quality points

B- 2.70 quality points

Passing Performance:

C+ 2.30 quality points

C 2.00 quality points

C- 1.70 quality points

Failure:

F Zero quality points

Withdrawal from a course:

W Zero quality points

Incomplete:

See information on next page regarding incomplete courses.

INC Zero quality points

Thesis students who did not complete work during the term in which they originally registered:

T Zero quality points

Audit indicates that a student registered and attended a class for no credit:

AU Zero quality points

Pass/Fail courses: Pass carries credits toward degree, use is limited to thesis and Executive M.B.A. courses.

P Zero quality points (Pass)

P+ Zero quality points (Pass with distinction)

F Zero quality points (Failure)

Non-credit courses:

S Zero quality points (Satisfactory performance)

U Zero quality points (Unsatisfactory performance)

Any grade change from one letter to another must be in accordance with procedures adopted by the Faculty Senate.

Academic Standing and Dismissal

Good academic standing is defined as a cumulative GPA (CGPA) of 3.00 or above upon evaluation of academic standing at the end of fall, spring, and summer terms. Students with a CGPA below 3.00 are no longer in good standing and the following will apply:

- Students with fewer than 9 credits completed and a CGPA less than 3.00 will be placed on Academic Warning. "Academic Warning" is an indicator for the student and the student's advisor that academic dismissal is imminent if the CGPA does not reach 3.00 by the following term;
- Students with at least 9 but fewer than 13 credits completed and a CGPA less than 3.00 but greater than 2.66 will be placed on Academic Warning with a registration hold which necessitates the permission of the program coordinator for registration. "Academic Warning" is an indicator for the student and the student's advisor that academic dismissal is imminent if the CGPA does not reach 3.00 by the end of the following term;
- Students with at least 9 but fewer than 13 credits completed and a CGPA of 2.66 or less will be dismissed but may be readmitted upon successful appeal if it is the student's first dismissal (see "Appealing Academic Dismissal" procedure below);
- Students with 13 or more credits completed and a CGPA less than 3.00 will be dismissed but may be readmitted upon successful appeal if it is the student's first dismissal (see "Appealing Academic Dismissal" procedure below).

STUDENT ADVISING AND GUIDANCE

Each student is assigned an academic adviser. Typically, the adviser is a member of the faculty in the major department for the student's degree program.

The MLS advisors/faculty and other academic advisors are available to provide guidance for course registrations. It is important that students complete the MLS coursework in a deliberate and systematic way to graduate on time.

The MLS director and faculty are available to advise students on program policy comprehension, academic issues, professional goals, or personal issues. If a student is experiencing a challenge that is affecting academic performance, whether it is an illness, a financial crisis, or some other concern, the student should speak with the Program Director as soon as possible. The Program Director will guide students towards applicable policies which may address issues affecting academic performance. All advising and counseling sessions are confidential. All decisions shall be made impartially. Students are encouraged to use the University of New Haven resources and personnel for professional counseling.

The MLS program and the UNewHaven are committed to impartiality and confidentiality of formal and informal information shared by students. The university has many services available to support students throughout their academic career; many of these resources can be found by contacting the [Center for Student Success](#). Refer to the [University of New Haven Student Handbook](#) for additional information on student success and advising as well as counseling and psychological services.

Academic Probation and Suspension: The UNewHaven MLS program follows the UNewHaven Academic Standards concerning academic probation. Policies regarding registration restrictions and appeals can be found in the [University of New Haven Student Handbook](#).

DISMISSAL FROM THE MLS PROGRAM:

Potential causes for dismissal include, but are not limited to:

- Violation of the University of New Haven Student Code of Conduct and/or other university policies per the [University of New Haven Student Handbook](#).
- Any act of unsafe behavior.
- Excessive absence or tardiness in any MLS course, including clinical rotations.
- Inability to meet general course competencies.
- Inability to complete the clinical courses as scheduled, for any reason, including student health issues.
- Dismissal from a clinical rotation by an assigned healthcare facility for any reason, per the affiliation agreement.
- Failure to obtain a minimum final grade of 73% [C] in any two MLS course or receiving less than 73% twice in any one MLS course.
- Failure to meet the minimum passing grade requirements for any prerequisite or MLS program course.
- Failure to obtain a minimum of 80% [B-] on the final comprehensive exam for the MLS program.
- “Never” responses to any of the behaviors outlined in the clinical rotations Affective Evaluation form.

Other issues, not described here, may arise where it is considered necessary to dismiss a student. In all cases of potential student disciplinary action, the MLS Academic Standards Committee will meet to discuss and address the situation.

MLS Academic Standards Committee

An Academic Standards Committee consisting of, at minimum, the Program Director and Clinical Coordinator will meet as needed to discuss student progress in the affective, didactic, clinical, and field settings.

For complaints with the potential for dismissal from the Program, the Standards Committee shall convene within twenty-four (24) hours of receipt of complaint to review and determine the outcome. For any situations which it is determined that student dismissal from the program is being considered, at least one other member of the SHS faculty or administration (most often either the Allied Health Department Chair and/or the SHS Associate Dean) shall be included in the evaluation of the situation, bringing the Program Standards Committee to a minimum total of 3 people.

Student Dismissal from the MLS Program

Students are expected to demonstrate integrity, professionalism, safety, and satisfactory academic performance in accordance with the standards and policies established by this Program Handbook. Documented concerns regarding a student’s unacceptable behavior and/or incompetent performance, in all settings (classroom, lab, and clinical) will be considered justification for the Academic Standards Committee to convene a meeting to discuss continued enrollment.

In situations where it is determined that a student will not be allowed to continue in the MLS Program, a formal meeting consisting of the student, the MLS Program Director, and at least one other member of

the Academic Standards Committee will be convened to deliver this decision to the student. Any discipline resulting in dismissal from the Program will be subject to the Appeals process established herein.

Appeal from Program Dismissal

A student who has been dismissed from the MLS Program may request a hearing with the MLS Academic Standards Committee. A written request to appear before the committee must be submitted to the Program Director within five (5) business days after date of written dismissal. The written request should briefly detail the reason(s) why the student believes that reconsideration of their case is warranted. Failure to provide a written request within the prescribed time will result in waiver of appeal.

Upon written submission by the student, an appeal will be heard by the MLS Academic Standards Committee. Hearings normally shall be conducted in private. The student has the right to an advisor during the hearing, and their advisor, if any, shall be allowed to attend the entire portion of the hearing at which information is received (excluding deliberations). The student has the right to be assisted by an advisor they choose who is a member of the University community who may not serve as an attorney. The student is responsible for presenting their own information, and therefore, advisors are not permitted to speak or to participate directly in any hearing. The student should select as an advisor a person whose schedule allows attendance at the scheduled date and time of the MLS Program Academic Standards Committee hearing because delays will not normally be allowed due to the scheduling conflicts of an advisor. (If a student needs to seek an advisor, please contact the Office of the Dean of Students.)

If the appeal is granted, the student will be notified by the Program Director via certified letter with copy to the student's University of New Haven email address. The Academic Standards Committee may require special arrangements or conditions to allow the student to remain in the program. Satisfaction of such conditions is an obligation of the student.

If there is no appeal or if an appeal is denied, the student will be removed from any MLS Program course(s) for which they are registered. Notification about the student's appeal status is made by the Program Director via certified letter with copy to the students' University of New Haven email address. The student may continue in any other University semester, intersession or summer course(s) but may not begin any MLS Program course(s) after the dismissal is effective.

Program Re-entry

A student may apply for re-entry, subject to an interview with the Academic Standards Committee. Re-entry will be determined on case-by-case basis and subject to a formal performance improvement plan. Given the progressive nature of the Program, upon re-enrollment the student must repeat all aspects of the MLS Program from the beginning. No credit will be given for previously passed examinations, didactic, laboratory, or clinical experiences.

This provision does not apply to students dismissed from the MLS Program for reasons other than academic performance such as Student Conduct violations. The possibility of re-entry will be determined at the time of dismissal and eligible for appeal under the Appeals process.

TECHNICAL STANDARDS/ESSENTIAL FUNCTIONS

SHS Policy on Technical Standards/Essential Functions

Admitted students must meet the technical standards/essential functions of their program of study. Technical standards establish essential qualities necessary to achieve the skills, knowledge, and competencies for entry-level practitioners as well as meet the expectations of the program's accrediting agency. All students must meet the established abilities and expectations. If a student is unable to fulfill the technical standards/essential functions, with or without accommodations, the student may be dismissed from the program.

MLS Program Technical Standards/Essential Functions

Technical Standards/Essential Functions make up the non-academic requirements of the profession that all students must demonstrate to succeed in the UNewHaven MLS program. After reading the Technical Standards/Essential Functions and meeting with the Program Director, students must sign the Technical Standards/Essential Functions form which will be kept in their MLS department file. Signing this form (see Appendix B) constitutes acknowledgement of and acceptance of these requirements, and affirms that you are aware of the technical standards/essential functions needed to succeed in the MLS Program. Once admitted to the program, failure to meet any of these Technical Standards/Essential Functions may result in dismissal from the program.

The Technical Standards/Essential Functions required for successful completion of the MLS program at the University of New Haven are listed below. In accordance with the university's commitment to providing equal access for individuals with disabilities under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA of 2008), students seeking reasonable accommodations to meet these requirements should contact the [Accessibility Resources Center](#) to ensure appropriate accommodations can be made in a timely manner.

Professional skills:

- Maintain professional decorum and composure in a wide variety of situations.
- Maintain confidentiality and integrity.
- Follow directions, be able to make decisions, prioritize tasks, and work on multiple tasks simultaneously.
- Work independently and in cooperation with others.
- Apply acquired learned skills and knowledge to new situations.
- Work with potential biologic, chemical, radiologic, mechanical, and electrical hazards.
- Maintain personal hygiene and neatness appropriate to the professional workplace.
- Achieve regular, reliable, and punctual attendance at classes and regarding their clinical responsibilities.

Communication skills:

- Communicate effectively and efficiently with coworkers and members of the healthcare team.
- Read and comprehend written material.
- Record information accurately and clearly.

Technical skills:

- Complete fine repetitive movements such as pipetting.
- Manipulate lab instruments.
- Demonstrate proficiency to work with flammable and infectious materials, hazardous chemicals, and electrical equipment.
- Demonstrate proficiency in all areas of the clinical lab.
- Work in areas with distracting noises, unpleasant odors and in close proximity to fellow workers.
- Perform all diagnostic procedures in the clinical lab.
- Perform delicate manipulations of clinical specimens, clinical lab equipment, tools, and instruments.
- Perform diagnostic procedure and venipuncture safely and accurately.
- Adhere to standard precautions and meet safety standards applicable to the clinical laboratory.
- Accurately identify, describe, and record fine details of clinical specimens both macroscopically and microscopically.
- Read and interpret charts, graphs, and labels.
- Read and interpret instrument panels and printouts.
- Independently perform all aspects of diagnostic procedures in the clinical lab and report results accurately and timely.

CLINICAL PRACTICUM

MLS students will complete a clinical practicum at an affiliated clinical laboratory site. All elective courses and appropriate MLSC courses must be successfully completed before a student will be eligible for enrollment into clinical practicum courses. The clinical rotation will prepare students for practice in a clinical laboratory and is designed to enhance the student's entry level competencies. During the rotation, the student will be exposed to the daily operations of the laboratory under the supervision of a certified experienced technologist. Students will rotate through the main sections of a clinical laboratory. These areas are Clinical Chemistry, Hematology/Hemostasis, Microbiology, and Immunohematology/Transfusion medicine. Students may be exposed to other subspecialty areas based on the clinical site.

All students enrolled in the UNewHaven MLS program must complete all required clinical experiences. If a student is unable to complete all required clinical experiences, they will not graduate from the MLS program and will not be eligible to take the ASCP BOC certification exam via Route 1.

All external clinical experiences must be completed at an affiliated clinical facility. The MLS program will assist students with placement at one of the affiliated clinical facilities. Each facility has its own requirements that must be met before accepting a student for a clinical placement. The student is responsible for meeting the facility's requirements. The UNewHaven MLS program is not responsible for securing clinical placements for students who are unable to meet a clinical facility's placement requirements.

Below is a brief description of student expectations and outcomes for the clinical rotation experience. Please refer to the separate Clinical Practicum Student Handbook for a full and detailed description of all student expectations and program policies regarding the clinical rotation experience.

Clinical curriculum

Through well-planned and supervised rotation, students will gain experience in the following areas of laboratory science:

Clinical Chemistry: The chemical analysis of blood and body fluids. This area may also include the subspecialties of serology and immunology: The detection, measurement and identification of antigens or antibodies produced by the immune system in response to the introduction of a foreign substance.

Hematology/Hemostasis: The study of the cellular components of blood and the mechanisms of hemostasis (blood clotting).

Urinalysis: The analysis of urine for cells, casts, protein, cholesterol, and glucose to aid in the diagnosis and treatment of kidney disease, diabetes, urinary tract infections, stone formation, and other diseases.

Microbiology: The culture, identification, and susceptibility testing of agents of infectious disease (viruses, parasites, bacteria, and fungi) by traditional biochemical techniques and molecular methods.

Immunohematology/Blood Bank: The science and technology used to prepare blood products and determine the suitability of blood products for transfusion.

Students may also complete supplemental laboratory rotations in Molecular Diagnostics, Virology, Flow Cytometry, and other subspecialty areas based on availability at the clinical rotation site.

After completion of the clinical practicum, students will be able to:

- Understand the responsibilities, roles, and functions of the Medical Laboratory Scientist.
- Apply general laboratory skills, like microscope use, pipette use, centrifuge use, and safety practices.
- Relate lab test results to patient conditions.
- Report results per clinical laboratory procedures.
- Effectively use basic problem-solving and troubleshooting procedures.
- Perform quality control procedures.
- Operate and maintain various instruments and analyzers used in routine clinical testing.
- Learn to adapt easily to new procedures.
- Implement organizational skills.

Assignment to Clinical Rotations

During the next-to-last semester of study, students will have the opportunity to arrange either virtual or in-person tours of affiliated clinical facilities. Students will then be able to rank clinical site preferences, noting first, second, and third choices for placement. Although student preference will be considered, final site assignment will depend on a variety of factors.

- Students are not guaranteed their first choice in clinical assignments.
- The assignment decision of the faculty is final. Students will be notified of their clinical site assignment prior to the end of the semester prior to entry into rotations.
- Students will receive a rotation schedule which will detail when they are assigned to each major department. For some clinical sites, this will include assignment to secondary sites for part or all of a given department. Students are responsible for arranging transportation to these secondary sites as well.

If student placement becomes difficult due to the lack of available slots, there will be a priority list that will be based on projected date of graduation, progress in preclinical courses, and willingness to graduate. Priority will be given to students who are ready for graduation immediately upon completion of practicum courses. Every attempt will be made to place all students and to avoid delaying student graduation.

A student who does not pass an assigned clinical rotation will be placed at the end of the priority list and must wait for the next available rotation if there are no other violations of the program's continuance policy.

It is the responsibility of the MLS students to review the didactic course materials in preparation for entering clinical rotations. This includes lecture notes, textbooks, lab materials, and clinical course objectives. Other sources that can be used includes the ASCP BOC Review and other review materials. These resources can be used to prepare for clinical seminars and the national certification.

Clinical rotation attendance is mandatory. See Appendix C for details of the clinical rotation attendance policy.

Requirements for Clinical Placement

To attend clinical rotations students must supply all the required documentation for the site assigned to and pay the necessary fees required for obtaining said documentation.

Required documents must be completed within specified time intervals. Students will be provided with information about specific requirements for their assigned clinical site prior to beginning their rotation experience. The financial costs of meeting any/all of these requirements are generally the responsibility of the student. If a student is not able to meet these requirements, they may not be able to complete the program's clinical experience requirements, which will impact the student's ability to successfully complete the MLS program as a whole.

Clinical affiliates may require any or all of the following for participation in a clinical rotation:

1. US Citizen: United States social security number and proof of citizenship.
2. International student: current I-20 document, valid passport from country of residence, valid documentation of visa or resident alien status.
3. Successful completion of a criminal background check.
4. Successful completion of drug screenings; may be required prior to and/or during rotations
5. Medical clearance and proof of immunizations
 - May include proof of appropriate COVID-19 vaccination/booster as well as influenza and hepatitis B vaccination (either record of previous immunization or demonstration of current immunity via appropriate testing)
 - Please note that, depending on the clinical site, a religious exemption may not be accepted as an appropriate substitute for immunization.
6. Student trainee license: if required by the state where clinical practicum experience is assigned.
7. HIPAA and safety training
8. CPR certification
9. Attendance at facility-specific orientation session(s)

NOTE: This is not an exhaustive list of all possible requirements; please contact the program Clinical Coordinator for specific details of requirements for clinical affiliates, as needed.

Clinical Instructors

Clinical instructors at the affiliated clinical sites are experienced Medical Laboratory Scientists who have a dedication to the profession and to students. They are employees of the clinical site and are not part of the university faculty or staff.

CLINICAL SITE INFORMATION

Information about each of the current clinical affiliates is available from the program Clinical Coordinator. Students must consult with the Clinical Coordinator prior to contacting any of the clinical site education coordinators. Preferences on methods of communication and whether said communication should be handled via the program faculty or the student, directly, will depend on the clinical site and the stage of assignment to a clinical site.

Current List of Clinical Facilities:

- VACT Healthcare – West Haven VA Medical Center
- Yale New Haven Health System
 - Yale New Haven Hospital
 - Bridgeport Hospital
 - Greenwich Hospital
 - Lawrence + Memorial Hospital
 - Westerly Hospital
- Hartford Healthcare
 - Hartford Hospital
 - MidState Medical Center
 - The Hospital of Central Connecticut at New Britain General and Bradley Memorial
 - The William W. Backus Hospital
 - Windham Community Memorial Hospital, Inc.
 - St. Vincent's Medical Center
- Stamford Health – Stamford Hospital
- Griffin Health – Griffin Hospital
- Nuvance Health – Danbury Hospital

NOTE: The specific locations available for clinical rotation placements within the above healthcare organizations is subject to change and is dependent on the needs and availability of staffing within each site. It is common practice for a primary location to have satellite locations where students will be expected to attend a portion of their rotations; for example, rotations at Yale New Haven Hospital may be completed at the both the main York Street facility and the St. Raphael's facility, and may also involve time spent at other satellite installations, as necessary.

Affiliation agreement with clinical sites: Contractual affiliation agreements are maintained with all clinical affiliate sites. The clinical facility must have enough staff so that the students do not perform service work in lieu of staff. Students can never be used to replace laboratory staff in shortage situations. Students may be employed by clinical affiliates. However, employment must be scheduled outside of clinical practice hours and must not conflict with the student's learning experience and/or performance evaluation. Service work and/or student employment cannot be used to fulfill practicum requirements. If a student wishes to work while in clinical rotation at the site, it is optional and paid.

Schedule and Hours

The current standard schedule for clinical rotations is as follows:

- Monday through Thursday each week, for a minimum of 13 weeks of the semester.

Students should expect to be on site for a standard 8-hour workday (typically 8.5 hours total, with a 30-minute meal break). Start times may be anywhere from 6:00 AM to 8:30 AM, depending on the area of the lab and the bench assignment for that day. Students should plan to be on site for the whole workday for the length of their rotation assignments.

Housing and Transportation

Although some clinical sites are nearby the University, other clinical sites may not be. The student is responsible for acquiring appropriate housing and/or transportation in the case of being assigned to a clinical site that is not close to the university or university housing.

Coordination of transportation to the assigned clinical site and all associated financial arrangements are also the responsibility of the student. Although every student is assigned to a primary clinical site, many sites will include rotations at multiple locations, as determined by the clinical facility. Thus, students must plan to travel to other locations. Neither the University nor the clinical site is responsible for supplying transportation.

CERTIFICATION EXAMS

Eligibility

The Medical Laboratory Science Program is designed to meet the eligibility requirements for US MLS Certification. This certification is offered through the American Society for Clinical Pathology (ASCP) Board of Certification (BOC).

Upon successful completion of the MLS Program, the student will be eligible to sit for this examination and is expected to become certified within 3 months or as soon as is practical.

Application form

Eligible applicants must submit an online application for the ASCP examination. For US Certification information and instructions on how to apply, please go to: [ASCP Certification Information](#)

Fee

Payment of an application fee is required upon submission of the online application. The cost of the Board of Certification (BOC) examination is determined by the agency (ASCP) and is currently:

[BOC \(ASCP\) MLS Exam](#): \$250.00 (as of 8/02/24)
(Application fee is subject to change without notice)

International Certification and State Licensures

Some states require a license to work, which may require successful completion of additional coursework, clinical practicum time, or a state-administered examination. The MLS Program does not guarantee provision of appropriate course work/experience/practica to meet certification or licensure requirements other than those of the ASCP. It is the student's responsibility to complete the additional requirements necessary to work in these states. Each state provides its own guidelines for licensing, which are available on state agency websites such as the state specific department of health.

For additional information on states licensure see:

- [ASCLS - Licensure Information](#)
- [ASCP BOC – Licensure Information](#)

Certification Exam Schedule

The ASCP BOC exam is offered as a computer adaptive test (CAT) throughout the year and at designated examination sites. Once the application has been processed through ASCP, you will receive information about how to schedule your exam.

Student Responsibility

Each eligible student handles all aspects of the ASCP BOC exam. Student responsibilities include accessing the application on-line (see link below), paying the exam fee, scheduling the exam, transportation to the testing site, consequences for tardiness or absenteeism, and retakes if he/she fails the exam. Please follow all the instructions as indicated on the testing website.

To apply online go to: [ASCP BOC Application](#)

OPERATIONAL POLICIES

The **UNewHaven** MLS program follows fair practices:

- Student recruitment and admission will be non-discriminatory per existing governmental regulations and those of the sponsor.
- Faculty recruitment and employment practices will be non-discriminatory following existing governmental regulations and those of the sponsor.
- The granting of the degree or certificate will not be contingent upon the student passing any type of external certification or licensure examination.
- A teach out plan will be developed and sent to NAACLS within 30 days of the official announcement of the closure of the program.
- Service work by students in clinical settings outside of academic hours will be noncompulsory.
- Students may not be substituted for regular staff during their student experiences.

Equal Opportunity and Non-Discrimination Policies

The University of New Haven is committed to achieving a diverse and pluralistic community that reflects the multiracial and culturally diverse society in the United States through strict non-discrimination in admissions, educational programs, and employment. The commitment to Affirmative Action is also a commitment to be proactive in the continuing effort to diversify the faculty, staff, and the student body at the University. The University will base decisions on employment so as to further the principle of equal employment opportunity.

Refer to the linked pages for more information about [UNewHaven Equal Opportunity Statements](#) and [Title IX information](#).

Student Accessibility Resources

The University of New Haven takes great pride in the accomplishments, both personal and academic, of its many students and alumni. In keeping with this ideal, the University is committed to providing equal access for individuals with disabilities to all of its programs and services. This commitment embodies the University's determination to ensure the inclusion of all members in its community and is consistent with legal requirements of both Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act ("ADAAA") of 2008.

[The Accessibility Resources Center](#) ("ARC") provides comprehensive supports and a range of services that serve to promote educational equity and ensure that students are able to participate in the opportunities available at the University of New Haven.

To sustain this objective, students are expected to exercise a significant degree of independence while also being encouraged to utilize the resources of the Accessibility Resources Center as well as other campus resources to the degree the student determines necessary to obtain academic, social, and career goals. The Accessibility Resources Center is available to assist students as the need arises.

PROGRAM CLOSURE TEACH OUT PLAN

NAACLS requires the program to have a “teach out” plan in case the program unexpectedly closes due to natural or unnatural disasters or permanent closure. Intentional closure of the program will be communicated to all students at once. In case of disaster the university will inform students of a plan for continuation of their education as soon as that information is available. NAACLS will be notified and a teach out plan will be provided to them within 30 days of the official announcement of program closure.

Prospective students:

- In the case of permanent closure students will be informed that the program will not take a new cohort due to program closure.
- In the case of a natural or unnatural disaster the program will work with other laboratory science programs to continue education and training until training can resume at the college.
- Students will be counseled in applying to other local programs.
- Program closure information will be posted on the program website.

Current students:

- Students will be informed of program closure.
- In the case of a natural or unnatural disaster the program will work with other laboratory science programs to continue education and training until training can resume at the college.
- In case of a mandated permanent closure currently enrolled students will be allowed to complete program.
- The Program Director will be designated to clear students applying for the certification exam.

PROFESSIONAL MEMBERSHIPS

Students are encouraged to enroll as student members in one or more of the professional organizations within MLS. The organizations serve to meet the interests and needs of the members including continuing education and information on laws and regulations pertinent to the field. Many of these organizations offer student membership rates and students are entitled to all privileges and benefits designated to the student member. This includes the receipt of professional journals, announcements of local, regional, and national meetings, and bulletins.

Following is a list of some of the membership agencies and phone numbers:

American Society for Clinical Laboratory Science [ASCLS]

1861 International Drive, Suite 200. McLean, VA 22102

Ph. 571.748.3770

www.ascls.org

American Society for Clinical Pathology [ASCP]

33 W. Monroe Suite 1600. Chicago, IL 60603

Ph: 312-541-4999

www.ascp.org

Association for the Advancement of Blood and Biotherapies [AABB]

(formerly American Association for Blood Banks [AABB])

8101 Glenbrook Road. Bethesda, MD 20814

Ph: 301-215-6489

www.aabb.org

Association for Diagnostics and Laboratory Medicine [ADLM]

(formerly American Association for Clinical Chemistry [AACC])

1850 K Street, NW, Suite 625. Washington, D.C. 20006

Ph: 800-892-1400

www.aacc.org

American Society for Microbiology [ASM]

1752 N. Street N.W. Washington, D.C. 20036-2904 Ph: 202-737-3600

www.asm.org

APPENDIX A – Admission Criteria and Procedures

UNewHaven Medical Laboratory Science (MLS) Graduate Program Admission Criteria and Procedure

Application Requirements for Graduate Students

Master's Application Checklist

- [Online application](#)
- \$50 non-refundable fee
- Official university transcripts and proof of bachelor's degree completion. An explanation of your university grading system must also be provided along with your transcripts.
- Two letters of recommendation from your professors or employers
- A "Statement of Purpose" is required.
- A résumé is highly recommended.
- The MS in MLS does not currently require GRE test scores, but recommends submission of scores if they are available.
- An interview is not required but may be requested if deemed appropriate by the program.
- Other materials not listed here may be requested as needed.

CRITERIA	RECOMMENDED MINIMUM PREREQUISITES
GPA (4.0 scale)	2.5 overall; 2.7 biology, chemistry, and math prerequisite coursework
Biology coursework	General biology with lab (BIOL 2253/2255 equivalent), 4 credits Human physiology or pathophysiology, 3 - 4 credits General microbiology with lab (BIOL 3301/3302 equivalent), 4 credits
Chemistry coursework	General chemistry I and II with labs (CHEM 1115/1117 and CHEM 1116/1118 equivalent), 8 credits Biochemistry with lab (BIOL 4461/4462 equivalent), 4 credits <i>Recommended: Organic chemistry I with lab (CHEM 2201/2203 equivalent), 4 credits</i>
Math coursework	College algebra (MATH 1110 equiv.) or higher, 3 credits <i>Recommended: Introductory Statistics (MATH 2228 equivalent) or Biostatistics, 3 or 4 credits</i>
English Language Requirement (Int'l Applicants)	TOEFL: 80 IELTS: 6.5 PTE: 53 Duolingo: 105
GRE	Not required or recommended

Additional Requirements for International Students

- [A Checklist for International Students](#)

For more information, please refer to: <https://www.newhaven.edu/admissions/graduate/apply/>

Or contact the office of graduate admissions for assistance.

(203) 932-7440; graduate@newhaven.edu

APPENDIX B – Acknowledgement of Program Requirements

Technical Standards/Essential Functions required for the MLS program:

Technical Standards/Essential Functions required for successful completion of the MLS program at the University of New Haven are:

Professional Skills

- Maintain professional decorum and composure in a wide variety of situations.
- Maintain confidentiality and integrity.
- Follow directions, be able to make decisions, prioritize tasks, and work on multiple tasks simultaneously.
- Work independently and in cooperation with others.
- Apply acquired learned skills and knowledge to new situations.
- Work with potential biologic, chemical, radiologic, mechanical, and electrical hazards.
- Maintain personal hygiene and neatness appropriate to the professional workplace.
- Achieve regular, reliable, and punctual attendance at classes and regarding their clinical responsibilities.

Communication Skills

- Communicate effectively and efficiently with coworkers and members of the healthcare team.
- Read and comprehend written material.
- Record information accurately and clearly.

Technical Skills

- Complete fine repetitive movements such as pipetting
- Manipulate lab instruments.
- Demonstrate proficiency to work with flammable and infectious materials, hazardous chemicals, and electrical equipment.
- Demonstrate proficiency in all areas of the clinical lab.
- Work in areas with distracting noises, unpleasant odors and in close proximity to fellow workers.
- Perform all diagnostic procedures in the clinical lab.
- Perform delicate manipulations of clinical specimens, clinical lab equipment, tools, and instruments.
- Perform diagnostic procedure and venipuncture safely and accurately.
- Adhere to universal precaution measures and meet safety standards applicable to the clinical laboratory.
- Accurately identify, describe, and record fine details of clinical specimens both macroscopically and microscopically,
- Read and interpret charts, graphs, and labels.
- Read and interpret instrument panels and printouts.
- Independently perform all aspects of diagnostic procedures in the clinical lab and report results accurately and timely.

Student Acknowledgement of Technical Standards/Essential Functions

By signing below, I acknowledge that I have read and understood the Technical Standards/Essential Functions required for successful completion of the MLS program at the University of New Haven. I am aware that failure to meet any of the Technical Standards/Essential Functions may result in dismissal from the program.

Student: _____
PRINTED NAME

Student: _____
SIGNATURE

Date: _____

Confirmed by:

MLS Program Director: _____
PRINTED NAME

MLS Program Director: _____

Date: _____

MLS Program Academic Commitment

I have received a copy of the University of New Haven Medical Laboratory Science Program Student Handbook. By signing this MLS Program Academic Commitment, I affirm my understanding and commitment to act in accordance with the policies set forth within the Medical Laboratory Science Program Student Handbook (“Program Handbook”). My continuation in the University of New Haven MLS Program (“Program”) shall be contingent upon my meeting the requirements of the course instruction as set forth in the Program Handbook.

I acknowledge understanding of the following:

- I will follow the direction of the Program Director, Clinical Coordinator, Standards Committee, and faculty.
- I may be dismissed from the Program in accordance with the policies set forth in Program Handbook.
- I will be responsible to purchase materials, textbooks, and equipment, required for participation in the Program.
- Fees associated with national certification testing are not included in tuition and I will be solely responsible for payment thereof.
- The Program Handbook policies serve as guidelines and are not inclusive and may change from time to time at the discretion of the Program.
- In the performance of clinical and field activities, I am not an employee of the clinical or field sites.

By signing below, I certify that I have read, understand, and agree to abide by the policies and procedures of the MLS Program as set forth in this Program Handbook.

Student: _____
PRINTED NAME

Student: _____
SIGNATURE

Date: _____

Confirmed by:

MLS Program Director: _____
PRINTED NAME

MLS Program Director: _____

Date: _____

MLS Program HIPAA Compliance Policy

All students must follow Health Insurance and Portability and Accountability Act (HIPAA) rules when participating in clinical activities at affiliated hospitals and clinical sites. HIPAA Rules provide federal protections for patient health information and give patients an array of rights with respect to that information. Included in this suite of regulations is the Privacy Rule, which protects the privacy of individually identifiable health information and addressed the use and disclosure of Protected Health Information (PHI). Students are responsible for safeguarding the information by meeting the requirements of the Rules.

HIPAA Privacy Rule

The Privacy Rule protects most individually identifiable health information held or transmitted in any form or media, whether electronic, paper, or oral. Individually identifiable health information is information, including demographic information, that relates to:

- The individual's past, present, or future physical or mental health or condition,
- The provision of health care to the individual, or
- The past, present, or future payment for the provision of health care to the individual.

In addition, individually identifiable health information identifies the individual or there is a reasonable basis to believe it can be used to identify the individual. For example, a medical record, laboratory report, or hospital bill would be PHI if information contained therein includes a patient's name and/or other identifying information.

HIPAA allows use or disclose of personal health information without the patient's written authorization in some limited circumstances:

- to certain public health authorities for public health activities;
- to certain government authorities, including social service or protective service agencies, when the information relates to abuse, neglect, or domestic violence;
- to health oversight agencies for audits; licensure or disciplinary actions; civil, administrative, or criminal investigations, proceedings, or actions; or other oversight activities;
- in the course of any judicial or administrative proceeding in response to a court or administrative tribunal order, subpoena, discovery request, or other lawful process;
- for certain law enforcement purposes;
- for research purposes (with a board-approved waiver authorization);
- to avert a serious threat to health or safety;
- for specialized government functions, including some military and veterans activities; and
- for workers' compensation cases (45 C.F.R. § 164.512).

Entities may also disclose a decedent's personal information without written authorization (1) to coroners, medical examiners, and funeral directors and (2) for cadaveric organ, eye, or tissue donation purposes.

A detailed summary of the HIPAA laws and regulations can be found at:

<http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary>.

As students and providers, you must undertake the proper safeguards to protect the privacy and security of PHI accessed in any clinical setting. You are to become familiar with and follow the policies and procedures on confidentiality and privacy for each health care system to which you are assigned.

Best Practices for Safeguarding PHI

Best practices for safeguarding PHI include, but are not limited to:

- Access patient information only if you need that information to complete your training.
- Share or discuss patient information only if it is necessary to complete your training and only in appropriate locations with individuals covered by the same Rule.
- Close patient room doors and curtains when discussing treatments or administering procedures.
- Be cognizant of your surroundings in shared spaces and speak softly.
- Avoid conversations in public spaces like elevators, shuttles, and cafeterias.
- You should never leave patient files unattended in a public area such as a conference room even if you step away for only a few minutes.
- If you have access to electronic health records, never share login and password information and log off computer sessions when you will be away from a workstation.
- You should never take patient files off the premises except in circumstances when you have permission from the Clinical Coordinator and/or preceptor.
- You may not disclose PHI to anyone outside of the clinical or field site without first de-identifying the information (see below).
- If you become aware of, or suspect that there has been, an impermissible acquisition, access, use or disclosure of PHI in a manner not permitted under HIPAA, you should immediately report the circumstances of the suspected breach to your Clinical Coordinator.

De-Identifying PHI

The Privacy Rule does not restrict the use or disclosure of de-identified health information. De-identified health information neither identifies nor provides a reasonable basis to identify an individual. If data is de-identified in the manner prescribed by HIPAA, it is not PHI. Increasingly researchers are seeking and using de-identified clinical data for health system improvement activities. The Privacy Rule permits a CE or its BA to create and freely use and disclose information that is not individually identifiable by following the Privacy Rule's de-identification requirements. These provisions allow the entity to use and disclose information that neither identifies nor provides a reasonable basis to identify an individual.

The Rule provides two de-identification methods: 1) a formal determination by a qualified expert or 2) the removal of eighteen (18) specified individual identifiers as well as absence of actual knowledge that the remaining information could be used alone or in combination with other information to identify the individual.

Note that just removing the identifiers specified in the Privacy Rule may NOT make information de-identified. However, once PHI is de-identified in accordance with the Privacy Rule, it is no longer PHI, and thus may be used and disclosed, subject to any other applicable laws.

- Individual Identifiers
- Names
- Dates, except year
- Telephone numbers
- Geographic data
- FAX numbers
- Social Security numbers
- Email addresses
- Medical record numbers
- Account numbers
- Health plan beneficiary numbers
- Certificate/license numbers
- Vehicle identifiers and serial numbers including license plates
- Web URLs
- Device identifiers and serial numbers
- Internet protocol addresses
- Full face photos and comparable images
- Biometric identifiers (i.e., retinal scan, fingerprints)
- Any unique identifying number or code

If you are unable to de-identify PHI, you must discuss your need to use identifiable information with the Clinical Coordinator to determine necessity and any the appropriate procedures.

Note: The HIPAA Rules provide a floor of federal protections for PHI. However, the Rules are not the only laws that address the protection of health information. In addition to HIPAA, certain Connecticut laws also provide protection for personal health information. Examples include laws that:

- prohibit persons from selling or offering to sell personal health information (CGS § 38a-988a) and
- prohibit the Department of Public Health (DPH) from publicly disclosing personally identifiable information about a patient in an institution, except in licensure proceedings (CGS § 19a-499).

Another law also establishes a bill of rights for individuals admitted to a nursing home, residential care home, or chronic disease hospital. This law (1) assures confidential treatment of patients' personal and medical records and (2) gives patients the right to approve or refuse the release of their records to any individual outside the facility, except in the case of a patient's transfer to another health care institution or as required by law or a third-party payment contract (CGS § 19a-550(b)).

The HIPAA Rules do not override such state laws that do not conflict with the Rules and offer greater privacy protections. If a state law is less protective than the HIPAA Rules, both apply.

By signing below, I certify that I have read, understand, and agree to abide by the MLS Program HIPAA Compliance policy.

I understand there are both educational and legal consequences if I violate this policy. Any reported violations of HIPAA will be reviewed by the Academic Standards Committee, which will make recommendations on discipline in accordance with the MLS Program Student Handbook.

Student: _____
PRINTED NAME

Student: _____
SIGNATURE

Date: _____

Confirmed by:

MLS Program Director: _____
PRINTED NAME

MLS Program Director: _____

Date: _____

APPENDIX C – Rotation-Specific Policies

Please refer to the separate Clinical Practicum Student Handbook for a full and detailed description of all student expectations and program policies regarding the clinical rotation experience.

Clinical Rotation Attendance Policy

Attendance is mandatory. Unexcused absences are not permitted.

Students **must inform** the program director/clinical coordinator, and the appropriate clinical laboratory supervisor/preceptor (to which they are assigned) of any planned or unplanned absence.

Students must communicate lateness or attendance to the clinical site in accordance with the specific policies of the clinical site.

Failure to communicate an absence as directed may be considered an unexcused absence and may be grounds for failure of the rotation.

Students must obtain appropriate permission for a requested absence in advance, from the course director and the clinical laboratory supervisor/preceptor.

For excused absences in a standard 3- or 4-week rotation: Students may make up missed days if performance on days attended is satisfactory and if students make up the excess days in a manner that is acceptable to the clinical site, clinical coordinator and/or the program director.

- 1-2 days: no make-up time required (if performance on days attended is satisfactory)
- 3-4 days: remediation required (per the agreement of the clinical site)
- 4+ days: repeat of rotation will be required (based on availability at the clinical site)

Frequent absences, regardless of the reason, may be used as one component in calculating a student's overall grade.

Also, note the standard attendance policy per the [UNewHaven Handbook](#).

Misrepresenting absences or absence requests is a breach of professional ethics and will be treated as an Academic Integrity Violation.

Affective Behavior And Technical Performance Evaluation

This evaluation will be completed by the site preceptor for each of the major laboratory departments from their clinical rotation experience.

PRECEPTOR INSTRUCTIONS FOR COMPLETING THE AFFECTIVE EVALUATION:

For each component, please mark which of the following descriptors is the most appropriate, based on observations made throughout the student's rotation.

A: Always – Student demonstrates the behavior on a consistent basis and without the need for being reminded.

S: Sometimes – Student is inconsistent in their behavior or requires regular reminders to meet the stated expectations.

N: NEVER – The student failed to demonstrate the behavior at any point.

N/O: Not Observed – Use this column ONLY if you have not spent sufficient time with the student to accurately judge student behavior.

- If [S] or [N/O] are marked for any behavior, please provide a brief comment, if possible, with details supporting this rating.
- If [N] – NEVER was marked for any behavior, YOU MUST PROVIDE A COMMENT OR EXPLANATION.
 - *It is expected that any behavior marked as [NEVER] at the end of the rotation has been PREVIOUSLY ADDRESSED TO THE UNIVERSITY CLINICAL COORDINATOR. This form should not be the first time this issue is being documented.*

NOTE: This evaluation will be completed digitally via the CORE ELMS platform.

For any questions, concerns, or issues regarding UNH clinical rotations, please contact either the Clinical Coordinator (primary option) or the Program Director (secondary option):

Denise Fix, MEd, EdS, MLS(ASCP)

PRACTITIONER IN RESIDENCE | CLINICAL COORDINATOR, MEDICAL LABORATORY SCIENCE
School of Health Sciences, University of New Haven

Email: dfix@newhaven.edu

Beth Rawson, MS, MLS^{CM}(ASCP)SH^{CM}SCYM^{CM}

LECTURER | PROGRAM DIRECTOR, MEDICAL LABORATORY SCIENCE
School of Health Sciences, University of New Haven

Email: brawson@newhaven.edu

Phone: 203-479-4707

PROFESSIONAL BEHAVIORS					
ATTITUDE and ENGAGEMENT	A	S	N	N/O	COMMENTS
1. Displays, through appropriate professional/workplace behavior and performance, recognition and respect for honest laboratory testing, patient confidentiality, and high-quality patient outcomes.					
2. Demonstrates the ability to ask pertinent questions or for assistance if needed.					
3. Follows established policies and procedures of the clinical site and university.					
4. Complies with the established dress code policy as outlined in the clinical practicum manual.					
5. Reports to the laboratory at the scheduled time.					
6. Notifies the University Clinical Coordinator and the Clinical Site Coordinator when unable to report to the clinical practicum.					
7. Complies with the attendance policy as outlined in the student handbook.					
8. Maintain composure and work quality under stressful conditions.					
9. Complies with both written and verbal instructions.					
10. Demonstrates the ability to work independently within student guidelines.					
11. Communicates courteously, effectively, and professionally with instructors, laboratory staff, other health care personnel.					
12. Demonstrates interest and enthusiasm for the clinical laboratory science profession.					
13. Demonstrates concern for professional self-image and that of the medical laboratory science profession by practicing ethical behavior.					
14. Accepts evaluation of performance as constructive when offered by instructors and other laboratory personnel and follow through with suggestions made.					
15. Observes and complies with all HIPAA regulations and maintain the confidentiality of all privileged information.					
16. Accepts both leadership of supervisory personnel and criticism appropriately.					
17. Cooperates with other laboratory personnel to create a pleasant and efficient work environment.					

GENERAL LABORATORY SKILLS					
TECHNICAL	A	S	N	N/O	COMMENTS
1. Recognizes technical problems and plans/attempts corrective action.					
2. Utilizes reagents and supplies judiciously.					
3. Maintains a clean, organized work area.					
4. Assists preceptor with general tasks as needed, such as restocking, documentation, workflow management/ triage, and maintenance.					
5. Observes site policies on data management and data security.					
6. Demonstrates organizational skills through ability to coordinate the quantity of work needed to be done with the time available for its completion.					
7. Practices acceptable quality assurance as established for each clinical area.					
8. Coordinates theory with laboratory analysis to appropriately judge and interpret patient data.					
9. Demonstrates self-confidence in the operation of equipment and in the performance of laboratory procedures, under the supervision of appropriate clinical site personnel.					
10. Recognizes and applies site policies for identification and reporting of critical values.					
11. Reports patient laboratory results only to authorized personnel, and only under the supervision of appropriate clinical site personnel.					
12. Demonstrated the ability to operate a centrifuge safely.					
13. Demonstrated the ability to competently use a microscope.					
14. Demonstrated the ability to choose and appropriately use pipettes.					
15. Demonstrated the ability to properly apply laboratory math functions (i.e., in creating dilutions/serial dilutions, for reagent preparation, etc.)					

SAFETY Observes/follows all safety protocols and procedures, including but not limited to:	A	S	N	N/O	COMMENTS
16. Use of appropriate PPE.					
17. Use of appropriate engineering controls.					
18. Follows Standard Precautions when handling specimens.					
19. Performs handwashing at appropriate times.					
20. Is aware of and responds appropriately to environmental hazards (physical, electrical, fire, trip, etc.).					
21. Handles all kinds of waste correctly (biohazardous, sharps, general).					

Please comment on any [S] or [N/O] responses.

A COMMENT MUST BE PROVIDED FOR ANY [N] RESPONSES.

PLEASE NOTE:

Checking off “NEVER” for any of these behaviors/competencies will automatically result in a conference between the student and the university clinical coordinator and may include the site preceptor and/or the program director.

- Depending on the behavior/competency, a response of “SOMETIMES” or “NOT OBSERVED” may also result in a student conference.

*****A “NEVER” response on the affective evaluation may result in anything from counseling, a reduced grade for the rotation in question, repeating the clinical rotation, removal from the clinical site, failing the clinical rotation, all the way up to and including removal/expulsion from the MLS program.*****

APPENDIX D – MLSC Course Descriptions and Major Map

MLSC 6600 Phlebotomy and Sample Processing

In this course, students will be introduced to medical terminology including an overview of common prefixes, suffixes, and root words that are used in the field. The course will include quality assessment as it relates to specimen collection; infection control; role of the phlebotomist; blood collection procedures, non-blood specimen collection practices; sample transportation, processing, and management; medical and legal ethics as they relate to phlebotomy services. Laboratory fee. **2 credits.**

MLSC 6601 Clinical Immunology and Serology with Lab

This course will focus on the theory and practice of clinical immunology and practical serology. It will include the basic principles and mechanisms of the human immune system and immune response. The course will emphasize immunologic and serologic procedures including specimen collection, the immunological manifestations of infectious diseases, immune disorders, transplantation, and the correlation of clinical laboratory data with the patient's diagnosis and treatment. **4 credits.**

MLSC 6610 Laboratory Operations, Regulations, and Compliance

This course introduces the theory and evaluation of basic laboratory management principles in healthcare, including quality assessment (QA) and safety. The course will emphasize real world situations and applications to laboratory management including quality management (QM) and laboratory improvement initiatives, ethics, point-of-care, hiring, credentialing and personnel issues, laboratory regulations, proficiency testing, competency assessment and accreditation standards, quality control (QC), and laboratory information management (LIM). Professionalism, ethics, and continuing education will also be discussed as they relate to laboratory personnel. Students will be exposed to laboratory standard operating procedures, laboratory policies, and safety procedures. **3 credits.**

MLSC 6611 Clinical Chemistry

Clinical chemistry is an area in which changes occur frequently due to the introduction of new technologies and sophisticated instrumentation. This course focuses on the theory, practical application, technical performance, and evaluation of basic laboratory skills, methods, analytical techniques, and on some common automated technologies used in clinical chemistry. Emphasis will be placed on the interpretation, evaluation, and correlation of clinical laboratory data as it relates to the diagnosis, treatment, and monitoring of carbohydrate, renal, hepatic, protein and other nitrogen-containing compounds, heme-derivatives, cardiac, lipid/lipoprotein, major and minor electrolyte, enzyme, pancreatic-gastrointestinal and acid-base disorders. Other topics to be discussed include endocrinology, vitamins and nutrition, therapeutic drug monitoring, and toxicology. Laboratory fee. **4 credits.**

MLSC 6612 Immunohematology and Transfusion Medicine

Prerequisites: MLSC 6601

This course will provide students with an introduction to the theory and practical application of methods that are required for routine blood bank practices in order to provide compatible blood components for transfusion. These include the collection, processing, storage, and transfusion of blood and blood components, blood group systems, blood group immunology, physiology and pathophysiology, serology and molecular testing, and transfusion practice. The course will also introduce immunohematology procedures that are used in the diagnosis and management of hemolytic disorders. Laboratory fee. **3 credits.**

MLSC 6613 Clinical Bacteriology for Medical Laboratory Science

This course will include the study of the most clinically important bacterial pathogens encountered in the clinical laboratory, and will emphasize the correlation of clinical laboratory data with the patient's diagnosis and treatment. Emphasis will be placed on use of organism characteristics to identify common bacteria (morphologic, cultural, and biochemical traits; pathogenesis, pathology, epidemiology, risk factors), the analytical procedures for bacteriology, susceptibility of microorganisms to various antimicrobial agents and reporting results to healthcare providers, Infection Control/Prevention and Public Health authorities. **4 credits.**

MLSC 6614 Hematology with Laboratory

Prerequisites: MLSC 6601

This course will cover fundamental concepts in human hematology including the study of the production, function, and physiology of red and white blood cells, bone marrow, evaluation of red cell morphology, and discussion of disease processes that lead to abnormal red cell morphology such as anemias and thalassemias; white blood cell differentiation and disorders and classification of leukemias. There will be an emphasis on identifying normal and abnormal WBC and RBC morphology and indices. Course will include an overview of general hematological methods and automation used in the diagnosis of blood cell disorders, with practice of some basic manual procedures. Correlation of clinical laboratory data with the diagnosis and treatment of erythrocyte and leukocyte disorders will be emphasized. Laboratory fee. **4 credits.**

MLSC 6615 Clinical Mycology, Parasitology, and Virology

A thorough study of clinical parasitology, mycology, and virology. Included are taxonomy and structure, specimen collection and cultivation techniques, life cycles, reproduction, epidemiology and disease pathogenesis, microbial virulence, identification and control. It will cover the correlation of clinical laboratory data with the patient's diagnosis and treatment. Emphasis will be placed on the analytical procedures for mycology, parasitology, and virology and post analytic procedures including reporting to Infection Control/Prevention and Public Health. **3 credits.**

MLSC 6616 Blood Coagulation, Hemostasis and Urinalysis with Laboratory

This course will cover the basic principles of hemostasis including the vascular component, platelet physiology and function, coagulation factors, fibrin clot formation, and fibrinolysis. Hereditary and acquired forms of hemorrhagic disorders and thromboembolic disease are examined along with the test procedures for their diagnoses and the initiation and testing methods of therapy. The course will also cover the physical, chemical, microscopic analysis, and disease states of urine and other body fluids. Laboratory fee. **4 credits.**

MLSC 6631 Clinical Seminar

Prerequisites: MLSC 6600, MLSC 6610, MLSC 6611, MLSC 6612, MLSC 6613, MLSC 6614, MLSC 6615, MLSC 6616.

This course will prepare medical laboratory science students for the ASCP certification exam. Students will be provided with testing strategies and practice exams using various materials. Students will complete some exams during class time and online. Results from the exams will be used for the course grade. A grade of 80% or greater is required to pass the class. Exams will be reviewed to determine areas of weakness. This course will review all the medical laboratory science required courses completed prior to entering the final semester of the program. **2 credits.**

MLSC 6632 Clinical Seminar II

Prerequisites or co-requisites: MLSC 6631, MLSC 6642, MLSC 6652.

This course will prepare medical laboratory science students for the ASCP certification exam, as well as cover a variety of professional skills. Students will be provided with testing strategies and practice exams using various materials. Students will complete some exams during class time and online. Results from the exams will be used for the course grade. A grade of 80% or greater is required to pass the class. Exams will be reviewed to determine areas of weakness. This course will review all the medical laboratory science required courses. **3 credits.**

MLSC 6641 Clinical Practicum I – Clinical Chemistry

Prerequisites: MLSC 6600, MLSC 6601, MLSC 6610, MLSC 6611.

This component of the MLS program prepares students for practice in a clinical chemistry laboratory. It involves a rotation in the clinical laboratory at an affiliated licensed clinical laboratory hospital and is designed to enhance the student's entry level competencies. During the rotation, the student will be exposed to the daily operations of the clinical chemistry laboratory under the supervision of an experienced medical laboratory scientist. **2 credits.**

MLSC 6642 Clinical Practicum II – Hematology

Prerequisites: MLSC 6600, MLSC 6601, MLSC 6610, MLSC 6614, MLSC 6616.

This component of the MLS program prepares students for practice in a clinical hematology laboratory. It involves a rotation in the clinical laboratory at an affiliated licensed clinical laboratory hospital and is designed to enhance the student's entry level competencies. During the rotation, the student will be exposed to the daily operations of the clinical hematology laboratory under the supervision of an experienced medical laboratory scientist. **2 credits.**

MLSC 6643 Clinical Practicum III – Transfusion Services

Prerequisites: MLSC 6600, MLSC 6601, MLSC 6610, MLSC 6612.

This component of the MLS program prepares students for practice in a clinical immunohematology laboratory. It involves a rotation in the clinical laboratory at an affiliated licensed clinical laboratory hospital and is designed to enhance the student's entry level competencies. During the rotation, the student will be exposed to the daily operations of the clinical immunohematology laboratory under the supervision of an experienced medical laboratory scientist. **2 credits.**

MLSC 6644 Clinical Practicum IV – Clinical Microbiology

Prerequisites: MLSC 6600, MLSC 6601, MLSC 6610, MLSC 6613, MLSC 6615.

This component of the MLS program prepares students for practice in a clinical microbiology laboratory. It involves a rotation in the clinical laboratory at an affiliated licensed clinical laboratory hospital and is designed to enhance the student's entry level competencies. During the rotation, the student will be exposed to the daily operations of the clinical microbiology laboratory under the supervision of an experienced medical laboratory scientist. **2 credits.**

MLSC 6651 Capstone Project I

Prerequisites: MLSC 6600, MLSC 6601, MLSC 6610.

This course involves the development of a capstone project in any area of the clinical laboratory. The student is expected to integrate and synthesize knowledge acquired through didactic courses and/or during the clinical rotation in the medical laboratory science program. Emphasis is on research design, process, measurement, management, regulatory issues, and ethics, as used by investigators in the field. **3 credits.**

MLSC 6652 Capstone Project II

Prerequisite: MLSC 6651.

This course involves the completion of a research project in any area of the clinical laboratory. The student is expected to integrate and synthesize knowledge acquired in the didactic courses and/or during the clinical rotation of the medical laboratory science program. Emphasis is on research design, process, measurement, management, regulatory issues, and ethics, as used by investigators. **3 credits.**

MS MLS Program Course Map – 2024-2025 Catalog Year

Full-time enrollment is the standard expectation.

2024-2025 ACADEMIC WORKSHEET

FALL ENTRY: STANDARD FULL-TIME SCHEDULE															
UNIVERSITY OF NEW HAVEN										Medical Laboratory Science - Graduate Program					
Student Name:					ID#					Major GPA		TRANSFER CREDIT:			
Last		First			M.I.							ADVISOR:			
		CR	SEM	GR											
PRE-REQ Courses:		BIOL 3301/3303 (Microbiology)			4										
		BIOL 3311/3313 (Molecular Biology)			4										
CODE		CR	SEM	GR	QP	MAJOR	CODE				CR	SEM	GR	QP	MAJOR
FALL 1							SPRING 1								
	MLSC 6610 Lab Operations, Regulation and Compliance	3						MLSC 6611/6621 Clinical Chemistry			4				
	MLSC 6600 Phlebotomy and sample processing	2						MLSC 6614/6624 Hematology with lab			4				
	MLSC 6601/6602 Clinical Immunology and Serology with Lab	4						MLSC 6612/6622 Immunohematology and transfusion			3				
	<i>PUBH or HCAD elective</i>	3						MLSC 6615 Clinical Mycology, Parasitology, Virology			3				
SEMESTER TOTAL:		12						SEMESTER TOTAL:			14				
FALL 2							SPRING 2								
	MLSC 6616/6626 Blood coagulation, Hemostasis and Urinalysis	4						MLSC 6652 Graduate Capstone Project II			3				
	<i>PUBH or HCAD elective</i>	3						MLSC 6631 Clinical Seminar			2				
	MLSC 6613/6623 Clinical Bacteriology for Med Lab Sci with lab	4						MLSC 6641 Clinical practicum - Clinical Chemistry			2				
	MLSC 6651 Graduate Capstone Project I	3						MLSC 6642 Clinical Practicum - Hematology			2				
								MLSC 6643 Clinical Practicum - Transfusion Services			2				
								MLSC 6644 Clinical Practicum - Clinical Microbiology			2				
SEMESTER TOTAL:		14						SEMESTER TOTAL:			13				
FINAL TOTAL:												53			

Note: There are several alternative schedules possible, including Spring entry and 5-semester full-time options from either Fall or Spring entry. Please speak with the Program Director to see what option may work best for your situation.

Part time schedules may be accommodated in extenuating circumstances; however, the final semester (including the clinical practicum coursework) MUST be taken as indicated here (full-time enrollment) with NO EXCEPTIONS.

APPENDIX E – Program Faculty

Primary Program Faculty:

Beth Rawson, MS, MLS(ASCP)^{CM}SH^{CM}SCYM^{CM}

Program Director, Lecturer

Email: brawson@newhaven.edu

Phone: 203-479-4707

Denise Fix, MEd, EdS, MLS(ASCP)

Clinical Coordinator, Practitioner in Residence

Email: dfix@newhaven.edu

Other Program Faculty:

Carleta Maurice, MS, MLS(ASCP)

Adjunct Professor, Allied Health

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Michele Gambardella, MPH, MLS(ASCP)^{CM}

Adjunct Professor, Allied Health

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Joseph Kullberg, BS, M(ASCP)^{CM}

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Adjunct Professor, Allied Health

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Yanice Méndez-Fernández, PhD, MPH

Associate Dean, School of Health Sciences;

Assistant Professor, Population Health and

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Email: ymendezfernandez@newhaven.edu

Elizabeth Nash, MS, MLS(ASCP)^{CM}

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Email: enash@newhaven.edu

Claire Quattropani, BS, MLS(ASCP)^{CM}

Adjunct Professor, Allied Health

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Angela Schwartz, BS, MLS(ASCP)

Adjunct Professor, Allied Health

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Leslie Zucker, MBA, FACHE, MLS(ASCP), LSSBB

Adjunct Professor, Population Health and

Leadership

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