

American Society for Clinical Laboratory Science

EDUCATION SCIENTIFIC ASSEMBLY



CLINICAL LABORATORY EDUCATION

DIRECTORY OF ONLINE

MLS GRADUATE PROGRAMS

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Introduction

Currently the *Medical Laboratory Education Online Directory* lists online programs that fall under one of four categories:

- ✓ **Medical Laboratory Technician (MLT)**
- ✓ **Medical Laboratory Science (MLS)**
- ✓ **MLT to MLS articulation programs**
- ✓ **Graduate programs in Clinical Laboratory Science**

It is possible that this is not a “comprehensive” listing of online programs, therefore please contact the Education Scientific Assembly (ESA) chair to have your program added. This Online Directory will be amended as new information becomes available. Contact information for the ESA chair can be found at the following ASCLS web address <http://www.ascls.org/ascls-leadership/scientific-assemblies>.

To efficiently utilize this directory simply double click or “Ctrl+click” on the program listed in the table of contents.

Georgia Regents University

Type of degree program: Master of Health Science in Clinical Laboratory Science

Institution: University

Online delivery options: All MLS classes offered online

“On-campus” (face to face) time required for online courses: All MLS classes offered online. Students do not have to come to Augusta campus for any classes. Laboratories will be at satellite campuses, or Clinical Affiliates and internships will be at the Clinical Affiliates. Please call for further clarification.

Total Length of program: 5 semesters

Contact person: Barbara Kraj, MS, MLS(ASCP)^{CM}, MB(ASCP)^{CM}
Professor and Program Director
Phone: 706-721-3047
Fax: 706-721-7631
Email: bkraj@gru.edu or clsprogram@gru.edu

Mailing Address: Clinical Laboratory Science
Georgia Regents University
EC-2430
987 St. Sebastian Way
Augusta, GA 30912

Program Web address: <http://www.gru.edu/alliedhealth/mlirs/cls/index.php>

Enrollment Process:

Complete core requirements, information on core requirements are found at http://catalog.gru.edu/preview_program.php?catoid=18&poid=1456

Apply on-line at <http://www.gru.edu/admissions/graduate/master-clinical-laboratory.php>

Retraining or refresher course options: No

George Washington University

Type of Degree Program: Numerous online, graduate degree programs are available:

- MSHS in Medical Laboratory Sciences
- MSHS in Molecular Diagnostic Sciences
- MSHS in Clinical Microbiology
- MSHS in Translational Microbiology
- MSHS in Clinical and Translational Microbiology
- MSHS in Immunohematology and Biotechnology

Institution: University - private

Online Delivery Options: Didactic courses are fully online.

“On-campus” (face to face) time required for online courses: Some graduate programs include a required practicum, which may be completed at approved sites.

Total Length of Program: Typical program of study takes 2 years, but may vary depending on the number of courses taken per semester.

Contact Information: Stephanie Serven, M.Ed.
Assistant Director of Admissions and Enrollment
Services for Certificate and Graduate MLS Programs
sserven@gwu.edu
(202) 994-7732
Or send e-mail to: studymls@gwu.edu

Mailing Address: School of Medicine and Health Sciences
Medical Laboratory Sciences Programs
2100 Pennsylvania Avenue, NW
Washington, DC 20037

Program Web Address:
<http://smhs.gwu.edu/medical-laboratory-sciences/>

Enrollment Process: Apply online at <http://smhs.gwu.edu/medical-laboratory-sciences/>

Retraining or refresher course options: Online graduate courses may be taken for retraining or as a refresher course with permission. Interested individuals should contact the program for the admission process and non-degree course offerings.

Idaho State University

Type of degree program: MLS Graduate Program

- Route 1: Professionals, who already possess credentials as Medical/Clinical Laboratory Scientists or Medical Technologists
- Route 2: Professional Entry level M.S. completing certification requirements while pursuing the M.S. degree. Completion of a B.S. or B.A. degree and at least 16 credits of chemistry to include Inorganic, Organic, and/or Biochemistry and/or Analytical Chemistry, 16 semester hours of Biology, one semester in Microbiology, one semester of Calculus, one semester of Physics. Candidates entering by route 2 will be required to take 6 credits of BIOL 411N which does not count toward the MS Degree.

Institution: University

Online delivery options: ALL MLS classes offered online (with permission)

“On-campus” (face to face) time required for online courses: Many graduate courses required are available on-line or by distant learning technology. Some travel to ISU campus may be required for the presentation of seminar and defense of thesis.

Total Length of program: 2 – 3 years (Variable)

Contact person: Sonja Nehr-Kanet MS, MLS
Program Director/Clinical Associate Professor
Phone: 208-373-1716
Fax: 208 - 373-1795
Email: nehrsonj@isu.edu

Mailing Address: (Program offered at two locations – Pocatello and Meridian, Idaho)

Idaho State University
Medical/Clinical Laboratory Science (Medical
Technology) Program
Idaho State University - Meridian Health Science
Center
1311 East Central Drive, Meridian, Idaho 83642

Program Web address: www.isu.edu/cls

Enrollment Process: Applicants may apply online at the web address

listed above. They also need to apply to ISU Graduate school.

<http://www.isu.edu/graduate/index.shtml>

Retraining or refresher course options: Yes. Students may apply as non-degree seeking and take up to 7 credits. Depending upon the situation courses may be taken with the permission of MLS faculty for credit or audit.

Michigan State University

Type of degree program: Master of Science (MS) in Clinical Laboratory Science, Master of Science in Biomedical Laboratory Operations, Master of Arts (MA) in Biomedical Laboratory Science and various Certificate Programs

Institution: University

All three, degree granting programs can be completed fully online. The MS in Clinical Laboratory Science can be Plan A (with thesis project when completed in the appropriate setting) or Plan B. The MS in Biomedical Laboratory Operations is a Plan B option and requires the completion of a science and management project. The MA in Biomedical Laboratory Science (non-thesis option) is a course-based degree program.

Online delivery options: All courses required for the master's degree programs are taught online. Each student's program is individually designed by that student, the graduate advisor, graduate director and their graduate committee to meet the needs and interests of the student.

"On-campus" (face to face) time required for online courses: No campus time is required for the online classes listed; or for our master's degree programs.

Total Length of program: The pace at which the student progresses through the program is designed to fit the working professional's needs. It can be completed in as little as 2 years or as many as six years. Minimum credit requirements for our programs are 30 to 31 credits (based on the degree program). The graduate academic advisor can assist you with developing a course plan that best suits your timeline for degree completion.

Contact person:

Rachel Morris PhD, MLT (ASCP) ^{CM}
Graduate Program Director
Email: rlmorris@msu.edu
Phone: (517) 432-2609

Michelle Russell MS, MLS (ASCP) ^{CM}
Graduate Program Coordinator and Academic
Advisor
Email: russmich@msu.edu
Phone: (517) 432-2559

Mailing Address: Biomedical Laboratory Diagnostics Program
Michigan State University
North Kedzie Hall
354 Farm Lane, Room N322
East Lansing, MI 48823-1031

Program Web address: <https://bld.natsci.msu.edu/online-education/>.

Enrollment Process: There are two types of students that can take our graduate courses:

- **Graduate Students-** These are students that have applied to and have been accepted to one of our graduate degree programs. This is a formal application process. The admitted student progresses through the program and their course credits apply towards a conferred degree. See the following website for more information on the Application Process:

<https://bld.natsci.msu.edu/academics/graduate-programs/applying/>

- **Lifelong Education Students:** These students do not go through the same rigorous application process as the graduate students. All of our courses may be taken as a Lifelong student, either as part of a certificate program or as individual coursework. A Lifelong student may take as many individual courses as they desire. See the following website for information on the Lifelong student application:

<https://bld.natsci.msu.edu/online-education/molecular-laboratory-diagnostics/registration/>

Note: Up to 9 credits of graduate course work taken as a Lifelong student can be applied toward one of our degree granting programs, upon formal acceptance to the program. Contact the Graduate Program Coordinator for details.

All courses below may be taken individually, as part of a certificate program, or formal degree program:

CERTIFICATE PROGRAMS:

Molecular Laboratory Diagnostics

BLD 830 - Concepts in Molecular Biology - 2 credits

BLD 831 - Clinical Applications of Molecular Biology - 2 credits

BLD 832 - Molecular Pathology Laboratory - 2 credits*

Managing Biomedical Laboratory Operations

BLD 842 - Managing Biomedical Laboratory Operations - 2 credits

BLD 844 - Topics in Biomedical Laboratory Operations - 1 credit

BLD 846 - Decision Processes for Biomedical Operations - 2 credits

Immunodiagnosics and Clinical Flow Cytometry

BLD 850 - Concepts in Immunodiagnosics - 2 credits

BLD 851 - Clinical Applications of Immunodiagnostic Principles - 2 credits

BLD 852 - Immunodiagnosics Laboratory - 2 credits*

Advanced Flow Cytometry

BLD 853 - Advanced Flow Cytometry - 2 credits

BLD 854 - Advanced Flow Cytometry Laboratory - 2 credits*

Transfusion Service Management

BLD 835 - Hemostasis, Thrombosis, and Effective Resource Management - 3 credits

BLD 836 - Adverse Transfusion Outcomes: Detection, Monitoring, and Prevention - 2 credits

BLD 837 - Transfusion Service Operations and Management -1 credit

BLD 838 - Clinical Context of Blood Product Management - 1 credit

Clinical Mass Spectrometry

BLD 870 - Clinical Mass Spectrometry Theory - 2 credits

BLD 871 - Applied Clinical Mass Spectrometry - 2 credits

BLD 872 - Clinical Mass Spectrometry Laboratory - 2 credits*

*NOT AN ONLINE CLASS, CAMPUS ATTENDANCE NECESSARY (OR ARRANGED AS AN INDEPENDENT STUDY)

OTHER AVAILABLE ONLINE COURSES

BLD 805 - Communication in the Sciences - 2 credits

BLD 811 - Fundamentals of Scientific Research - 1 credit

BLD 861 - Emerging Infections, Emerging Technology - 2 credits

BLD 862 - Advances in Diagnostic Microbiology - 3 credits

Course Series in Cell Biology

BLD 815 - Cell Biology in Health and Disease I - 2 credits

BLD 816 - Cell Biology in Health and Disease II - 2 credits

Rush University

Type of degree program: Masters of Science in Clinical Laboratory Management (Two-year Program)

Institution: University

Online delivery options: All didactic courses are offered online.

Total Length of program: 2 years; Part-time enrollment is available

Online courses offered:

Year One Fall Semester

CLM 500 Principles of Lab Management

CLM 501 Evidence-Based Research & Applied Statistics

CLM 502 Quality Systems & Regulatory Issues

Year One Spring Semester

CLM 503 Method Comparison & Process Validation

CLM 504 Scientific & Technical Writing

CLM 505 Health Care Finance

Year One Summer Semester

CLM 507 Issues & Practices in Human Resource Management

CLM 508 Health Care Informatics

CLM 506 Management Project I

Year Two Fall Semester

CHS Ethics

CLM 513 Legal Issues in Health Care

HSC 634 Issues and Trends in Health Care

Year Two Spring Semester

CHS 620 Health Care in America

CLM 509 Management Project II

CLM 510 Management Experience

Contact persons: Maribeth L. Flaws, Ph.D., MT(ASCP) SM, SI
Chairperson and Program Director, Online Master of
Science in Clinical Laboratory Management
Department of Medical Laboratory Science
Rush University

Phone: 312-942-2115
Email: [Maribeth L Flaws@rush.edu](mailto:Maribeth.L.Flaws@rush.edu)

Mailing Address: Rush University, 1021-AAC
600 South Paulina Street
Chicago, IL 60612

Program Web address: www.rushu.rush.edu/cls/

Address to download applications for the SBB/MS Program:
www.rushu.rush.edu/admiss/hlthadm.html

Enrollment Process: Students apply to the graduate SBB/Masters Program by submitting an **online** application to the Medical Laboratory Science department at:
<https://ruapplying.learn.rush.edu/admissions/pages/welcome.aspx>

Minimum requirements include:

- Bachelor's degree from a regionally accredited university/college in medical laboratory, biological or other related science
- Minimum GPA of 3.0 out of 4.0 (Lower GPAs may be considered on an individual basis)
- Documentation of MLS(ASCP), MT(ASCP), CLS(NCA) or other Certification
- 2 years working experience in an accredited laboratory. One year laboratory experience in a blood bank laboratory for the SBB/CLM and SBB Certificate Program.

Can the online courses be used for "retraining" or as a "refresher" course? If yes, please explain and indicate if taken for credit or no credit/audit.

Yes. Individual courses may be taken for credit. Priority to register for courses given to enrolled students.

Rush University

Type of degree program: Accelerated Masters of Science in Clinical Laboratory Management with the Specialist in Blood Bank Certificate

First year-SBB courses. At the completion of the first year, the candidate will be eligible to take the Specialist in Blood Bank (SBB) Certification Exam. Second year-Management courses.

Institution: University

Online delivery options: All didactic courses are offered online. "Face to Face" time required for the Specialist in Blood Banking Clinical Practicum online course

Students with prior clinical experience may qualify to complete the SBB Clinical Practicum course through credit by proficiency based upon standardized departmental evaluation.

Total Length of program: 2 years; Part-time enrollment is available

1st year SBB graduate curriculum, 2nd year Masters in Clinical Laboratory Management.

Individuals who are certified SBBs through ASCP Board of Certification may earn credit by proficiency for professional experience through standardized departmental evaluation.

Online courses offered:

Year One Fall Semester

SBB 560 Human Blood Group Systems and Principles & Methods of Antibody Identification

SBB 561 Clinical Immunohematology & Transfusion

Year One Spring Semester

SBB 562 Blood Procurement & Blood Product Manufacturing

SBB 563 Blood Bank & Transfusion Service Operation

Year One Summer Semester

SBB 564 SBB Project & Clinical Practicum

SBB 565 SBB Comprehensive Review

Contact persons: Laurie Gillard MS, MLS(ASCP)^{cm} SBB^{cm}
Director, Specialist in Blood Bank Program
Phone: 312-942-2402

E-mail: laurie_gillard@rush.edu

Mailing Address: Rush University, 1021-AAC
600 South Paulina Street
Chicago, IL 60612

Program Web address: www.rushu.rush.edu/cls/

Address to download applications for the SBB/MS Program:
www.rushu.rush.edu/admiss/hlthadm.html

Enrollment Process: Students apply to the graduate SBB/Masters Program by submitting an **online** application to the Medical Laboratory Science department at:
<https://ruapplying.learn.rush.edu/admissions/pages/welcome.aspx>

Minimum requirements include:

- Bachelor's degree from a regionally accredited university/college in medical laboratory, biological or other related science
- Minimum GPA of 3.0 out of 4.0 (Lower GPAs may be considered on an individual basis)
- Documentation of MLS(ASCP), MT(ASCP), CLS(NCA) or other Certification
- 2 years working experience in an accredited laboratory. One year laboratory experience in a blood bank laboratory for the SBB/CLM and SBB Certificate Program.

Can the online courses be used for "retraining" or as a "refresher" course? If yes, please explain and indicate if taken for credit or no credit/audit.

Yes. Individual courses may be taken for credit. Priority to register for courses given to enrolled students.

Rutgers – School of Health Professions

Type of degree program: Graduate Certificate in Clinical Laboratory Science

Institution: University

Online delivery options: All courses offered online.

“On-campus” (face to face) time required for online courses: No

Total Length of program: 12 credits

Contact person: Catherine Otto, Ph.D., MBA, MLS (ASCP) CM
Associate Professor & Program Director
Phone: 973-972-8826
Fax: 973-972-8527
Email: co247@shp.rutgers.edu
Mailing Address:
Rutgers - School of Health Professions
Clinical Laboratory and Medical Imaging Sciences
65 Bergen Street SSB Suite GB 20
Newark, NJ 07107

Program Web address: <http://shp.rutgers.edu/dept/CLS/GCLS/index.html>

Enrollment Process:

Non-matriculated enrollment in courses (up to 12 credits) at:

http://shp.rutgers.edu/prospective_students/admissions/admissions9_non_matric.html

Retraining or refresher course options: No.

Rutgers – School of Health Professions

Type of degree program: Masters of Science in Clinical Laboratory Science (MS-CLS)

Institution: University

Online delivery options: All courses offered online.

“On-campus” (face to face) time required for online courses: No

Total Length of program: 33 credits

Contact person: Catherine Otto, Ph.D., MBA, MLS (ASCP) CM
Associate Professor & Program Director
Phone: 973-972-8826
Fax: 973-972-8527
Email: co247@shp.rutgers.edu
Mailing Address:
Rutgers - School of Health Professions
Clinical Laboratory and Medical Imaging Sciences
65 Bergen Street SSB Suite GB 20
Newark, NJ 07107

Program Web address: <http://shp.rutgers.edu/dept/CLS/MSCLS/index.html>

Enrollment Process:

Matriculation application at:

http://shp.rutgers.edu/prospective_students/admissions/online_app.html

Non-matriculated enrollment in courses (up to 12 credits) at:

http://shp.rutgers.edu/prospective_students/admissions/admissions9_non_matric.html

Retraining or refresher course options: No

Rutgers – School of Health Professions

Type of degree program: Master of Science in Health Care Management (MSHM)

Institution: University

Online delivery options: All courses offered online.

“On-campus” (face to face) time required for online courses: No

Total Length of program: 30 credits

Contact person: Janet Reid Hector, Ed.D
Program Director
Phone: 973-972-8578
Email: reidhejd@shp.rutgers.edu
Mailing Address:
Rutgers School of Health Professions
65 Bergen Street SSB Rm. 353
Newark, NJ 07107

Program Web address: <http://shp.rutgers.edu/dept/IDS/mshm/program.html>

Enrollment Process:

Matriculation application at:

http://shp.rutgers.edu/prospective_students/admissions/online_app.html

Non-matriculated enrollment in courses (up to 12 credits) at:

http://shp.rutgers.edu/prospective_students/admissions/admissions9_non_matric.html

Retraining or refresher course options: None

Rutgers – School of Health Professions

Type of degree program: Doctorate in Clinical Laboratory Science-DCLS
(Advanced Practice Doctorate)

Institution: University

Online delivery options: All theoretical courses offered online

“On-campus” (face to face) time required for online courses:

- None for theoretical courses.
- Program requires one year full-time clinical residency

Total Length of program: Total credits: 80

Contact person: Nadine A. Fydryszewski, PhD, MLS (ASCP)^{CM}
DCLS Program Director, Professor and Vice-Chair
Phone: 973-972-5089
Fax: 973-972-8527
Email: fydrysna@shp.rutgers.edu

Mailing Address: Rutgers - School of Health Professions
Clinical Laboratory and Medical Imaging Science
65 Bergen Street SSB Suite GB 20
Newark, NJ 07107

Program Web address: <http://shp.rutgers.edu/dept/CLS/DCLS/index.html>

Enrollment Process: Matriculation application at:
http://shp.rutgers.edu/prospective_students/admissions/online_app.html

Retraining or refresher course options: No.

Texas Tech University Health Sciences Center

Type of degree program: Second Degree Post Baccalaureate in Medical Laboratory Science

Institution: University

Online delivery options:

All MLS courses are delivered online for individuals who have completed a four-year science degree from an accredited university.

“On-campus” (face to face) time required for online courses:

Six-day laboratory session is conducted on-site at the end of each of the first two semesters (fall and spring)

Total Length of program: 12-months

Contact person: Tammy Carter, PhD, MT(ASCP), MB(ASCP)^{CM}
Program Director
Phone: 806-743-4457
Email: tammy.carter@ttuhsc.edu

Mailing Address: TTUHSC School of Health Professions
3601 4th Street, Stop 6281
Lubbock, TX 79430-6281

Program Web address:

<https://www.ttuhsc.edu/health-professions/second-degree-postbac-clinical-laboratory-science/>

Enrollment Process:

<https://www.ttuhsc.edu/health-professions/second-degree-postbac-clinical-laboratory-science/admissions-requirements.aspx>

Retraining or refresher course options: None

Texas Tech University Health Sciences Center

Type of degree program: Post Baccalaureate Certificate Program in Clinical Laboratory Science

Institution: University

Online delivery options:

All CLS courses are delivered online for individuals who have completed a four-year science degree from an accredited university.

“On-campus” (face to face) time required for online courses:

Six-day laboratory session is conducted on-site at the end of each of the first two semesters (fall and spring)

Total Length of program: 12-months

Contact person: Tammy Carter, PhD, MT(ASCP), MB(ASCP)^{CM}
Program Director
Phone: 806-743-4457
Email: tammy.carter@ttuhsc.edu

Mailing Address: TTUHSC School of Health Professions
3601 4th Street, Stop 6281
Lubbock, TX 79430-6281

Program Web address:

<https://www.ttuhsc.edu/health-professions/second-degree-postbac-clinical-laboratory-science/>

Enrollment Process:

<https://www.ttuhsc.edu/health-professions/second-degree-postbac-clinical-laboratory-science/admissions-requirements.aspx>

Retraining or refresher course options: None

San Francisco State University

Type of degree program: Post-baccalaureate CLS/MLS

Certification program Institution: University

Online delivery options: Undergraduate courses offered online
All CLS courses are offered off-line

Total Length of program: 1 pre-clinical semester on campus; 10 months clinical internship at affiliated laboratory; fourteen months total

Contact person: Susan Kazarian MB,CLS(CA)
Director
Clinical Laboratory Science Internship
Program Phone: 415-338-2332
Fax: 415-338-7747
Email: kazarian@sfsu.edu

Mailing Address: San Francisco State
University
CLS Internship Program
1600 Holloway Avenue,
Science 202
San Francisco, CA 94132

Program Web Address: <http://www.cls.sfsu.edu>

Enrollment Process: Admission information, including mandatory pre-requisite courses and application procedure, may be found on the website. Applicants must demonstrate eligibility for California's Clinical Laboratory Scientist Trainee License
Deadline: July 1st for spring semester and November 1st for fall semester.

Retraining or refresher course options: none at this time

University of Cincinnati

Type of degree program: Master of Medical Laboratory Science Leadership

- Multiple Degree Tracks Available
- Advanced Practice Molecular Microbiology/Immunology
 - Advanced Practice Cell Therapy and Immunohematology
 - Higher Education- Teaching and Learning, Educational Leadership and Medical Education
 - Health Administration and Management

Institution: University

“On-campus” (face to face) time required for online courses: All MLS classes offered online. Students do not have to come to campus for any classes or program related activities.

Total Length of program: 5 Semesters; Typical program of study takes 2 years, but may vary depending on the number of courses taken per semester.

Contact person: Patricia Tille Ph.D. MLS (ASCP) AHI (AMT) FASCS
Program Director (Graduate)
Phone: 605-759-3040
Fax: 513-558-7428
Email: tillepm@ucmail.uc.edu

Alternate Contact: University of Cincinnati Online Recruitment
Phone: 833-556-8611
Email: onlineenrollment@us.edu

Mailing Address: 45 Corry Boulevard
Cincinnati, OH 45219

Program Web address: <https://online.uc.edu/masters-programs/masters-medical-laboratory-science-leadership/>

(Main Website): <https://online.uc.edu/>

(Application Link): <https://grad.catalyst.uc.edu/apply/>

Retaining or Refresher Course Options: N/A

University of Massachusetts Lowell Continuing Studies and Corporate Education

Type of degree program: Graduate Certificate in Clinical Pathology

Institution: University

Online delivery options: All classes offered online.

Required:

30.550 Human Development and Pathophysiology

36.551 Advanced Pathophysiology

Electives - Choose 2:

32.604 Health Data Analysis

36.553 Advanced Clinical Biochemistry

36.580 Clinical Applications of Molecular Genetics

36.613 Infectious Disease

36.617 Medical Parasitology

36.559 Clinical Pharmacology

36.563 Nutritional Biochemistry

“On-campus” (face to face) time required for online courses: All of the above courses are offered online; however, if there is a proctored exam requirement, students who are enrolled in online courses and live within a 60 mile radius of UMass Lowell are required to come to campus to take proctored exams. Students who live beyond the 60 miles radius of UMass Lowell must identify a proctor and make appropriate arrangements with their instructors. For more information, visit <http://continuinged.uml.edu/online/clinicalpath.cfm>

Total Length of program: 4 courses

Contact person: Dr. Eugene Rogers
Phone: (978) 934-4478
Fax: (978) 934-3006
Email: Eugene_Rogers@uml.edu

Mailing Address: University of Massachusetts Lowell
Continuing Studies and Corporate Education
1 University Avenue
Lowell, MA 01854

Program Web address: <http://continuinged.uml.edu/online/clinicalpath.cfm>

Enrollment Process: To enroll in graduate-level courses, students must already possess an earned bachelor's degree. Students may register for one or two of these online courses as a non-certificate student, but the courses you take will not be counted towards a certificate until you have applied and have been formally accepted into the program.

Visit the Continuing Studies website to download a registration form at <http://continuinged.uml.edu> or call (800) 480-3190.

Visit the Graduate School website for a graduate certificate program application form at <http://www.uml.edu/grad> or call (978) 934-2380.

Retraining or refresher course options: Yes, anyone with a bachelor's degree may take these online courses. All of the courses are for graduate credit.

University of North Carolina at Chapel Hill

Type of degree program: Master's in Clinical Laboratory Science
Molecular Diagnostic Science Track (MCLS-MDS)

Institution: University

Online delivery options: Eligibility routes:

Route 1: This is the standard curriculum for the Master's in Clinical Laboratory Science – Molecular Diagnostic Science program (MDS). Students complete 18 months of coursework including a clinical rotation that lasts for one semester in the fall of the second year of the program.

Route 2: This curriculum option is available to applicants who meet all the eligibility requirements for the MDS program and

- Hold current ASCP – BOC (or equivalent) certification at the technologist level or higher (e.g. MLS, CG, SH) **OR** have 2 years full-time experience working in the U.S. or Canada in an accredited clinical laboratory within the last four years
AND

- Are currently working in a CLIA certified molecular diagnostic laboratory.

The curriculum plan is the same as the curriculum described in Route 1; however the requirement for the clinical rotation in a molecular laboratory may be satisfied by demonstrating competency in a specific set of molecular tests in molecular oncology, molecular genetics, and molecular infectious disease and by completing a Capstone project in the applicant's current work setting. For additional information on this eligibility route, visit the MDS website:

<http://www.med.unc.edu/ahs/clinical/students/mds-prospective/mds-curriculum>

Route 3: This curriculum option is available to applicants who meet all the eligibility requirements for the MDS program and

- Hold current ASCP – BOC (or equivalent) certification at the technologist level or higher (e.g. MLS, CG, SH) **OR** have 2 years full-time experience working in the U.S. or Canada in an accredited clinical laboratory within the last four years
AND

- Are currently working in a CLIA certified laboratory that performs molecular testing, but are currently employed in a different area of the clinical laboratory (e.g. microbiology, chemistry).

This curriculum option requires three years for completion because the students must learn molecular testing in their current work setting. The student is responsible for arranging the instructional time and obtaining the documentation of core competencies (See [Competency Checklist](#).)

For additional information on this eligibility route, visit the MDS website:

The requirement for the clinical rotation in a molecular laboratory may be satisfied by demonstrating competency in a specific set of molecular tests in molecular oncology, molecular genetics, and molecular infectious disease and by completing a Capstone project. Students will be required to gain and demonstrate laboratory skills with verification of molecular competencies. The instruction and competency verification can be acquired over three semesters (fall year 2, spring year 2, and fall year 3) while the individual continues to work in the clinical laboratory. The Capstone project must be completed when the student is enrolled in CLCS 743L. All required competencies must be documented by the end of the third fall semester in order to receive credit for CSLC 743L. An affiliation agreement must be established with the applicant's institution before the student is enrolled in the MDS program.

Eight courses are entirely on-line, two courses have both an on-line and on-campus component and one course is a clinical rotation in a molecular diagnostic laboratory.

MDS Curriculum

Term	Course #	Course Title	Credits	Format
Summer Session II	CLSC 705L	Clinical Laboratory Methods	2	Online instruction plus one week of on-campus laboratory
	CLSC 708	MCLS Biostatistics	3	Course is entirely on-line.
Fall 1	CLSC 710	Principles of Molecular Diagnostics	3	Course is entirely on-line.
	CLSC 730	Research Methods	3	Course is entirely on-line.
Spring 1	CLSC 720	Molecular Genetics and Diseases	3	Course is entirely on-line.
	CLCS 722	Molecular Diagnostic Science Applications	3	Course is entirely on-line.
	CLSC 735	Method Evaluation	3	Course is entirely on-line.
Summer Session I	CLSC 722L	Molecular Diagnostic Science Applications Lab	2	Online instruction plus one week of on-campus laboratory
Summer Session II	CLCS 750	Clinical Laboratory Administration	3	Course is entirely on-line.
Fall 2	CLCS 750	Educational Methods and Applications	3	Course is entirely on-line.
	CLSC 740L	Molecular Diagnostic Science Clinical Rotation	7	Clinical rotation in full service clinical molecular diagnostic laboratory. Rotations are Mon-Friday, 8 hours/day.

“On-campus” (face to face) time required for online courses: Two courses include a one week of on-campus laboratory sessions. The clinical rotation is a full-time learning experience in a molecular diagnostic laboratory for one semester.

Total Length of program: The MDS program can be completed in 18 months.

Contact person: Susan Beck Ph.D., MLS(ASCP)^{CM}
Phone: 919-966-3033
Email: sbeck@med.unc.edu

Mailing Address: Division of Clinical Laboratory Science
Suite 4100 Bondurant Hall, CB#7145
UNC – Chapel Hill
Chapel Hill, NC 27599-7145

Program Web address:
<https://www.med.unc.edu/ahs/clinical/prospectivestudents/mds-program/>

Enrollment Process: Applications are available on-line from the program website. See website for admissions deadlines and information.

To apply for Route 2, the prospective student should:

- Review the Competency Checklist to assess whether or not the specific types of testing (test menu) needed to complete the Competency Checklist are available at the student’s institution
- Develop a plan that describes in detail the testing to be performed, the platform or methodology to be used, and how the student will obtain and document competencies on the Competency Checklist.

The student’s proposed plan to meet the rotation objectives and competency should include the following:

- Test menus from each molecular laboratory section within the institution to include the test methodology or molecular platform used for each test.
- A proposed schedule for training for all academic semesters included in the rotation.
- Meet with the Laboratory Director and the immediate Supervisor and obtain their signed approval of the plan.
- Submit the plan with the signed approval of the Laboratory Director and the immediate Supervisor to the Division of Clinical Laboratory Science in addition to the application to the MDS program.
- Provide the Laboratory Director’s contact information so that the Division of

CLS can initiate an affiliation agreement.

To apply for Route 3, the prospective student should:

- Review the Competency Checklist to assess whether or not the specific types of testing (test menu) needed to complete the Competency Checklist are available at the student's institution
- Develop a plan that describes in detail the testing to be performed, the platform or methodology to be used, and how the student will obtain and document competencies on the Competency Checklist.

The student's proposed plan to meet the rotation objectives and competency should include the following:

- Test menus from each molecular laboratory section within the institution to include the test methodology or molecular platform used for each test.
- A proposed schedule for training for all academic semesters included in the rotation.
- Meet with the Laboratory Director and the immediate Supervisor and obtain their signed approval of the plan.
- Submit the plan with the signed approval of the Laboratory Director and the immediate Supervisor to the Division of Clinical Laboratory Science in addition to the application to the MDS program.

Provide the Laboratory Director's contact information so that the Division of CLS can initiate an affiliation agreement.

University of North Carolina at Chapel Hill

Type of degree program: Master's in Clinical Laboratory Science –
Medical Laboratory Science Track

Institution: University

Online delivery options: All courses may be completed online

This track in the Masters of Clinical Laboratory Science degree has been developed for certified laboratory professionals. The program prepares graduates to be leaders in the laboratory profession through advanced coursework in molecular diagnostics, research design, laboratory administration and educational methods. This online program is designed for laboratory professionals who wish to deepen their scientific knowledge, prepare for teaching roles, or advance in administrative roles. Students will be allowed to complete the program on a full time or part time basis.

Total Length of program: The MLS graduate program can be completed in 22 months. The Program can be completed on a part-time basis.

“On-campus” (face to face) time required for online courses: None

Enrollment Process: Applications are available on-line from the program website. See website for admissions deadlines and information.

Contact person: Susan Beck, Ph.D., MIs(ASCP)
Phone: 919-966-3033
Email: sbeck@med.unc.edu

Mailing Address: Division of Clinical Laboratory Science
Suite 4100 Bondurant Hall, CB#7145
UNC – Chapel Hill
Chapel Hill, NC 27599-7145

Program Web address: <https://www.med.unc.edu/ahs/clinical/prospectivestudents/mls-program/>

Required Courses MCLS-MLS Curriculum

Course Title	Number	Credits	Semester(s) offered	Prerequisite Course(s)
Biostatistics for Laboratory Professionals	CLSC 708	3	Summer Session II	
Principles of Molecular Diagnostics	CLSC 710	3	Fall	
Molecular Genetics and Diseases	CLSC 720	3	Spring	CLSC 710
Research Methods	CLSC 730	3	Fall	CLSC 708
Method Evaluation	CLSC 735	3	Spring	CLSC 730
Clinical Laboratory Administration	CLSC 750	3	Summer Session II	
Educational Methods and Applications	CLSC 770	3	Fall	
Capstone I	CLSC780	3	Fall or Spring	All required MLS courses are pre- or co-requisites
Capstone II	CLSC790	3	Fall or Spring	CLSC 780
Elective 1		3	Fall or Spring	
Elective 2		3	Fall or Spring	
Total Credits		33		

Sciences

Type of degree program: Masters in Medical Laboratory Science

Institution: University

Online delivery options: All courses delivered online; Courses available 24/7 with no mandated online meeting times

“On-campus” (face to face) time required for online courses:

Two 4-day sessions required (one toward the beginning and the other toward the end of the program)

Total Length of program: Variable depending on student preference; Average for a student also working full-time is ~3 years (fall and spring semesters only)

Contact person: Brooke Solberg, PhD, MLS(ASCP)^{CM}
Associate Professor/Graduate Program Coordinator
Phone: 701-330-3202
Email: brooke.solberg@med.und.edu

Mailing Address: UND Department of MLS
SMHS Stop 9037
Attn: Brooke Solberg
Grand Forks, ND 58202

Program Web address: <http://www.med.und.edu/medical-laboratory-science/mls-ms-program-overview.cfm>

Enrollment Process: Applications reviewed twice annually; Due by November 1st for a spring semester start date, or by July 15th for a Fall semester start date. See further application information on the program website.

Retraining or refresher course options: Non-degree option available for those wanting to complete a select few courses.

The University of Southern Mississippi

- Type of degree program:** Master's Degree Program in Medical Laboratory Science for individuals who possess certification as a medical technologist/medical laboratory scientist from a recognized national certification agency.
- Institution:** The University of Southern Mississippi
- Online delivery options:** All classes are offered online.
- "On-campus" (face to face) time required for online courses:** None
- Total Length of program:** 36 hours with a minimum of 18 of the 36 hours in courses numbered 600 or above. Students must complete the master's degree within five calendar years from the date of initial enrollment. Continuous enrollment during fall and spring semesters or reapplication is required.
- Contact person:** Cindy Handley, PhD, MT(ASCP)
Assistant Teaching Professor/Graduate Coordinator
Department of Medical Laboratory Science
University of Southern Mississippi
601-266-4909
Fax: 601-266-4913
cynthia.handley@usm.edu
- Mailing Address:** Master's degree in Medical Laboratory Science
Department of Medical Laboratory Science
118 College Drive, #5134
Hattiesburg, MS 39406-0001
- Program Web address:** <https://online.usm.edu/graduate/medical-laboratory-sciences-ms/>
- Enrollment Process:** http://apps.usm.edu/graduate-school/grad-school-apps/?utm_source=top-nav&utm_medium=web&utm_content=grad-apply&utm_campaign=admissions
- Retraining or refresher course options:** None

University of Tennessee Health Science Center

Type of degree program: Master of Science in Clinical Laboratory Science, Laboratory Management and Laboratory Utilization Tracks

Institution: University

Online delivery options: Web based courses

“On-campus” (face to face) time required for online courses: Campus visits are not required.

Total Length of program: 36 semester hours which will require 2 years of full time study or 3-5 years part time study.

Contact person: Linda L. Ross, MS, MT(ASCP), CLS(NCA)
Chairman, Department of Clinical Laboratory Sciences
Phone: (901)448-6304
Fax: (901)448-7545
Email: lross@utmem.edu

Mailing Address: University of Tennessee Health Science Center
Department of Clinical Laboratory Sciences
930 Madison Avenue, Suite 664
Memphis, TN 39163

Program Web address: <https://www.uthsc.edu/health-professions/cls/mls/>

Enrollment Process: The application to UTHSC is available from the program website. Admission requirements include:

- A degree from an accredited program in clinical laboratory sciences with a minimum GPA of 3.0 on a 4.0 scale
- National certification as a medical technologist, cytotechnologist or histotechnologist
- Two years work experience in a clinical laboratory; Tennessee state licensure will be required for any person who will be responsible for the performance of laboratory testing on human samples during the course of the studies. Licensure is available to all persons having a national certification as a medical technologist or cytotechnologist.
- Graduate Record Examination (GRE): combined score of 1000 on Verbal and Quantitative portions

Retraining or refresher course options: No

University of Texas Medical Branch

Type of degree program: Doctorate in Clinical Laboratory Sciences – DCLS
(Advanced Practice Doctorate)

Institution: University

Online delivery options: ALL theoretical classes offered online.

“On-campus” (face to face) time required for online courses:

- All didactic courses are available online.
- A minimum of four (4) consecutive weeks of DCLS clinicals which are face-to-face on-campus are required (currently only offered at the UTMB-Galveston location). These clinicals are spread out through the curriculum (about 1 per year).

Total Length of program: Approximately 3 years full time; part time option available

Contact person: Jose (Eddie) Salazar, Ph.D.
DCLS Program Director
Phone: 409-772-3044
Fax: 409-772-3067
Email: jhsalaza@utmb.edu

Mailing Address: Department of Clinical Laboratory Sciences
University of Texas Medical Branch
301 University Blvd.
Galveston, TX 77555-1140

Program Web address:

<https://shp.utmb.edu/ClinicalLaboratorySciences/DCLSprogram.asp>

Enrollment Process: Student can apply on-line through the website:

<https://shp.utmb.edu/ClinicalLaboratorySciences/ProspectiveStudents/Application.asp>

Retraining or refresher course options: No

University of Texas Medical Branch

Type of degree program: Master of Sciences for Science graduates, Master of Sciences for MLS graduates and Master of Sciences in Transfusion Medicine

Institution: University

Online delivery options: ALL MLS classes offered online.

“On-campus” (face to face) time required for online courses: Individuals who do not hold a MLS undergraduate degree must attend on-campus laboratories. Non-laboratory courses (e.g. management, research, etc.) do not require on-campus time.

Total Length of program: Approximately 2 years

Contact person: Jianzhi Zhang, M.D., M.S., M(ASCP)
Associate Professor/Program Director MLS Program
Phone: 409-772-3055
Fax: 409-772-9470
Email: jzzhang@utmb.edu

LeeAnn Walker, MEd; MT(ASCP) SBB
Assistant Professor/Program Director SBB Program
Phone: 409-772-3055
Fax: 409-772-9470
Email: lpwalker@utmb.edu

Mailing Address: Department of Clinical Laboratory Sciences
University of Texas Medical Branch
301 University Blvd.
Galveston, TX 77555-1140

Program Web address: <http://shp.utmb.edu/cls/>

Enrollment Process: Student can apply on-line through the website:
<http://shp.utmb.edu/cls/application.asp>

Retraining or refresher course options: Yes, the MLS courses are available as continuing education credits for individuals interested in retraining or refreshing. Additionally, categorical certificate programs are offered for individuals who already have a baccalaureate degree.

The University of Texas Rio Grande Valley

Type of degree program: Accelerated Master of Science Health Science (MSHS) with a concentration in Clinical Laboratory Sciences (CLS)

Institution: University

Online delivery options: All MSHS and CLS courses are delivered 100% on-line via the Blackboard Learning Management System in the form of 8 week accelerated modules.

The curriculum consists of 6 Health Sciences Core courses and 6 Clinical Laboratory Sciences Concentration courses:

Health Sciences Core:

HSCI 6345 Legal and Ethical Issues in Healthcare

HSCI 6307 Health Care Policy, Organization, and Financing

HSCI 7302 Professional Proposal Writing

HSCI 6310 Research in Health Science

HSCI 6300 Intro Health Care Systems & Quality Improvement

INFS 6340 Healthcare Informatics

Clinical Laboratory Sciences Concentration Courses:

CLSC 6300 Pathophysiology of Disease

CLSC 6302 Advanced Practice in Clinical Chemistry

CLSC 6301 Adv. Clinical Practice in Hematology & Hemostasis

CLSC 6305 Clinical Applications in Molecular Diagnostics

CLSC 6303 Adv. Practice in the Clinical Lab Diagnosis of Infectious Disease

CLSC 6304 Adv. Practice in Immunohematology and Immunology

“On-campus” (face to face) time required for online courses: There is no on-campus requirement for the Master of Science Health Science program.

Total Length of program: 1 year for full-time students, 2 years for part-time students

Contact person: Kim Garcia, MEd
Program Advisor
Phone: (956) 665-4781
Email: kim.garcia@utrgv.edu

Mailing Address: The University of Texas Rio Grande Valley

Graduate College
Marialice Shary Shivers Bldg. 1.158
1201 W. University Drive
Edinburg, Texas 78539

Program Web address: <http://www.utrgv.edu/hbs/graduate-programs/master-of-science-health-science-cls/index.htm>

Enrollment Process: Apply online at: <http://getonline.utrgv.edu/apply.aspx?program=UTRGV-M-HLTHSCI> and specify your interest in the CLS concentration in your application materials. Call 844-218-2727 for on-line application assistance.

An applicant who meets the following criteria is eligible for clear admission to the MSHS-CLS degree program:

- Has submitted all required documents.
- Has earned at least a 3.0 (on a 4.0 scale) on the graduate admission GPA calculation or earned a previous master's degree from an accredited university.
- Has been awarded a bachelor of science degree in Clinical Laboratory Science from an accredited institution or
- Is a medical technologist or medical lab scientist with AMT or ASCP generalist certification.

More information including conditional acceptance criteria can be found using the following link: <http://www.utrgv.edu/hbs/graduate-programs/master-of-science-health-science-cls/admission-criteria/index.htm>

Retraining or refresher course options: No

Virginia Commonwealth University

Type of degree program: CLS - PhD

Institution: University

Online delivery options: All courses for the doctoral degree are offered on-line.

“On-campus” (face to face) time required for online courses: Students spend periods on campus ranging from seven to fourteen days each during the months of June/July and December/January to complete one 6-month semester series of courses and begin the next 6-month semester course series.

Total Length of program: 4 years

Contact person: Teresa S. Nadder, PhD, MLS(ASCP)^{CM}
Chairman
Phone: (804) 828-9469
Fax: (804) 828-1911
Email: tsnadder@vcu.edu

Mailing Address: Virginia Commonwealth University
P.O. Box 980583
Richmond, Virginia 23298-0583

Program Web address: <http://www.sahp.vcu.edu/phd>

Enrollment Process: Complete the graduate application – forms available on website

Retraining or refresher course options: No

Winston-Salem State University

Type of degree program: Post-bachelor's categorical certificate (NOT a graduate degree)

Institution: University

Online delivery options: Completely online

"On-campus" (face to face) time required for online courses: None

Total Length of program: 9 – 12 months (depending upon course offerings); 14 semester hours to be taken in sequence

Contact person: Ellie Luethy, MT (ASCP), MHS
Coordinator CLS Distance Learning
Phone: (336) 750-2517
Fax: (336) 750- 2636

Email: clsdistancelearning@wssu.edu

Mailing Address: Winston Salem State University
CLS Distance Learning
137 Anderson Center
Winston-Salem, NC 27110

Program Web address:
http://catalog.wssu.edu/preview_program.php?catoid=13&poid=777&returnto=603

Enrollment Process: Apply to WSSU Undergraduate Admissions and to the MLS Dept. Instructions are on web page above.

Retraining or refresher course options: This certificate is for students with a bachelor's degree in biology, microbiology or chemistry who work in a clinical lab and are seeking MLS certification in clinical chemistry, hematology, microbiology, or immunohematology.