

Student Handbook 2019-2020

University of Utah School of Medicine Department of Pathology Medical Laboratory Science Undergraduate Program

The Medical Laboratory Science Program reserves the right to make changes in curricular offerings, academic policies, and to add or eliminate courses at any time. By enrolling at the University of Utah and in this program, students are giving their implied consent to abide by all policies, procedures, and regulations contained in the University of Utah General Catalog, in this student handbook, and in program bulletins. All statements in this handbook are true and correct as of the time of publication.

Table of Contents

Division Chief Welcome	- 3 -
Division Mission and Vision Statements.....	- 4 -
Clinical Rotation Sites’ Contact Information	- 5 -
Faculty and Staff Contact Information	- 7 -
Program Policies and Procedures	- 8 -
I. Introduction	- 8 -
II. Location.....	- 8 -
III. Program Officials	- 8 -
IV. Faculty	- 8 -
V. Staff.....	- 8 -
VI. Program Goals.....	- 8 -
VII. Program Affective Objectives	- 9 -
VIII. Expected Learning Outcomes and Career Entry Competencies for MLS Graduates	- 10 -
IX. Essential Requirements for the MLS Profession	- 11 -
X. Admission to Program.....	- 13 -
XI. Course Requirements	- 17 -
XII. Overview of Professional Courses	- 19 -
XIII. Challenging Courses.....	- 22 -
XIV. Tuition and Fees	- 23 -
XV. Scholarships and Financial Aid	- 23 -
XVI. Grading.....	- 24 -
XVII. Guidelines for Probation	- 24 -
XVIII. Student Records and Privacy Rights	- 25 -
XIX. Graduation	- 25 -
XX. Certification Examination	- 25 -
XXI. Program Committees	- 25 -
XXII. Appeal Procedure	- 26 -
XXIII. Student Information and Policies	- 26 -
XXIV. Professional and Community Organizations	- 30 -
XXV. Student Health Insurance.....	- 31 -
XXVI. Campus Facilities	- 31 -
XXVII. Teach Out Plan	- 32 -
Clinical Rotation Policies	- 33 -
I. Introduction	- 33 -
II. Current Clinical Affiliates and Training Sites.....	- 33 -
III. Objectives.....	- 33 -
IV. Procedure for Alternates in Clinical Rotations.....	- 34 -
V. Clinical Rotation Schedule.....	- 34 -
VI. Clinical Rotation Format.....	- 34 -
VII. Comprehensive Examination.....	- 35 -
VIII. Grading and Evaluation Systems.....	- 35 -
IX. Minimum Competency Reports	- 36 -
X. Attendance, Holiday, and Sick Policy	- 36 -
XI. Policy for Employment and Class Attendance During Clinical Rotations	- 37 -
XII. Student Service Work Policy.....	- 37 -
XIII. Appropriate Attire	- 38 -
XIV. Professional Conduct (Professionalism in the Work Place)	- 38 -
XV. Laboratory Safety (Refer to Clinical Laboratory Safety: a Manual for Students for policies and procedures)	- 38 -
XVI. Reporting Accidents and Incidents.....	- 39 -
XVII. Student Liability Insurance.....	- 39 -
XVIII. Termination of Clinical Rotation.....	- 39 -
XIX. Clinical Affiliation Agreements	- 39 -
XX. Communication During Clinical Rotations	- 39 -
Health Sciences Campus Map	- 40 -

Division Chief Welcome

Dear Medical Laboratory Science Students,

Every fall semester we look forward to a new group of students entering our undergraduate program. I extend a warm welcome to each of you on behalf of the Department of Pathology and the Division of Medical Laboratory Sciences. You have the advantage of studying at a major research university and medical school, while still enjoying the benefits of small classes. Our teaching facilities are outstanding and are complemented by a dedicated and knowledgeable faculty. We are eager and committed to help you be successful in your academic endeavors.

For second year students, clinical laboratory rotations provide stimulating educational experiences along with the most current technologies and concepts in laboratory science. You are one step closer to completing the program and becoming a certified medical laboratory scientist!

I wish you all the best this academic year and look forward to our associations.

Best Regards,

Diana G. Wilkins, PhD., M.S., MT(ASCP)
Professor and Division Chief
Medical Laboratory Sciences
Department of Pathology



Division Mission and Vision Statements

The mission of the program in medical laboratory science is to provide the highest standards of learning and scholarship to a diverse student population. The faculty are committed to preparing competent medical laboratory scientists with the necessary skills, attitudes, and professional integrity to become contributing professionals in the healthcare community. The Medical Laboratory Science Program supports the mission of the Department of Pathology, School of Medicine, at the University of Utah.

Our vision is to be among the prominent training programs for medical laboratory scientists and graduate students in laboratory medicine/biomedical science.

Clinical Rotation Sites' Contact Information

CLINICAL SITE/ DEPARTMENT	EDUCATION (TEACHING) COORDINATOR	PHONE NUMBER/EXTENSION EMAIL ADDRESS
ARUP (Central)		
<u>500 Chipeta Way</u>		
<u>Salt Lake City, UT 84108</u>		
Chemistry/Special Chemistry	Kent Buck	x-2407 kent.buck@aruplab.com
Coagulation	Tara Steele	x-3139 tara.steele@aruplab.com
Immunology	Helen Aderibigbe	x-2469 helen.aderibigbe@aruplab.com
Microbiology/Special Microbiology	Sheri Hohmann	x-3788 sheri.hohmann@aruplab.com
Molecular Diagnostics	Tracie Hymas	x-3412 tracie.hymas@aruplab.com
Flow Cytometry, Immunologic (Special Hematology)	John Andreasen	x-2372 andraj@aruplab.com
Flow Cytometry, Hematologic (Special Hematology)	Ramsey Mohl	x-3345 mohlra@aruplab.com
Blood Bank / Donor Center (This rotation includes time at the ARUP Donor center, 9786 Sandy Parkway (500 W) Sandy, Utah)	Edison Tam	x-2423 edison.tam@aruplab.com
	Mark Allen	x-3863 mark.allen@aruplab.com
Special Hematology	Andrea Parr	x-3479 andrea.parr@aruplab.com
South Jordan Health Center Basement, room 000		
5126 West Daybreak Parkway		
South Jordan, UT 84009		
Hematology	Breanne Swallow	801-213-5220 breanne.swallow@aruplab.com
	Loren Liu	801-213-5220 loren.liu@aruplab.com
	Melissa Anderson	801-213-5220 melissa.anderson@aruplab.com
<u>Intermountain Healthcare</u>		
Education Coordinator	Jen Danker	801-507-2142 jen.danker@imail.org
Alta View Hospital		
<u>9660 South 1300 East</u>		
<u>Sandy, UT 84094</u>		
Hematology and Chemistry	Carl Johanson	801-501-2245 carl.johanson@imail.org

CLINICAL SITE/ DEPARTMENT	EDUCATION (TEACHING) COORDINATOR	PHONE NUMBER/EXTENSION EMAIL ADDRESS
<i>LDS Hospital</i>		
<u>8th Avenue & C Street</u>		
<u>Salt Lake City, UT 84143</u>		
Hematology and Chemistry	Jeffrey Anderson	801-408-3682 jeff.anderson@imail.org
Blood Bank	Brynna Gates	801-408-5579; 801-599-8572 brynna.gates@imail.org
	Lara Millington	801-803-2824 lara.millington@imail.org
<i>Riverton Hospital</i>		
<u>3741 West 12600 South</u>		
<u>Riverton, UT 84065</u>		
Hematology and Chemistry	Holly Buchanan	801-285-2251 holly.buchanan@imail.org
<i>IMC Central Lab</i>		
<u>5121 South Cottonwood</u>		
<u>Murray, UT 84117</u>		
Chemistry	Kelly Mahi	801-507-2136 kelly.mahi@imail.org
Hematology	Karin Richens	801-507-2346; (Lab 801-507-2238) karin.richens@imail.org
Microbiology/Molecular Diagnostics	Vesta Dean	801-507-2223 vesta.dean@imail.org
<u>Steward Healthcare</u>		
<i>Jordan Valley Medical Center</i>		
<u>9000 South 3580 West</u>		
<u>West Jordan, UT 84088</u>		
Hematology and Chemistry	Becky Gough	801-601-2392; 801-562-4201 rebecca.gough@steward.org
<i>Jordan Valley Medical Center West Valley Campus</i>		
<u>3460 South 4155 West</u>		
<u>West Valley City, UT 84120</u>		
Hematology and Chemistry	Kent Elison	801-964-3633 S.Elison@steward.org
<u>MountainStar Healthcare</u>		
<i>St. Mark's Hospital</i>		
<u>1200 East 3900 South</u>		
<u>Salt Lake City, UT 84124</u>		
Supervisor	Jeff Howard	801-268-7112 jeffrey.howard2@mountainstarhealth.com
Blood Bank	Kim Beaslin	801-268-7397 kim.beaslin@mountainstarhealth.com
Hematology and Chemistry	Shawn Spjut Education Coordinator	801-268-7172 shawn.spjut@mountainstarhealth.com
Microbiology	Joe Wallis	801-268-7198 Joe.Wallis@mountainstarhealth.com

Faculty and Staff Contact Information

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Kris Pierce, MS, MLS(ASCP) ^{CM}	Teaching Laboratory Supervisor Instructor	801-581-7679; HSEB Room 4730 kristina.pierce@path.utah.edu
Diana Wilkins, PhD, MS, MT(ASCP)	Division Chief Professor	801-587-1242; SOM Room 5R475 diana.wilkins@path.utah.edu

**Program Policies and Procedures
Department of Pathology
University of Utah School of Medicine**

I. Introduction

The purpose of this handbook is to present policies, guidelines, and information concerning the Medical Laboratory Science Undergraduate Program, Department of Pathology, University of Utah School of Medicine. It is intended for use by students, faculty, staff, and administration alike and is meant to complement rather than to replace or supersede the information given in the general University catalog.

II. Location

The Medical Laboratory Science Program is housed in the School of Medicine, Department of Pathology. Within the Department of Pathology are five divisions: Anatomical Pathology & Molecular Oncology, Clinical Pathology, Medical Laboratory Sciences, Microbiology & Immunology, and Pediatric Pathology.

III. Program Officials

Dr. Peter Jensen, Department Chair, Department of Pathology
Dr. Diana Wilkins, Division Chief
Robert Durrant, Program Director
Takara Blamires, Associate Program Director
Mallory Leetham, Clinical Coordinator

IV. Faculty

Takara Blamires, MS, MLS(ASCP)^{CM}, Assistant Professor
Karen A. Brown, MS, MASCP, MLS(ASCP)^{CM}, Adjunct Professor
Rebecca Buxton, MS, MT(ASCP), Professor
Robert Durrant, MS, MLS(ASCP)^{CM}SM^{CM}, Assistant Professor
Mallory Leetham, MS, MLS(ASCP)^{CM}, Assistant Professor
Omar Muñoz, MS, MLS(ASCP)^{CM}, Assistant Professor
Lacey Murphy, MS, MLS(ASCP)^{CM}, Instructor
Wales Nematollahi, PhD, MT(ASCP), Assistant Professor
Kristina Pierce, MS, MLS(ASCP)^{CM}, Instructor
Diana Wilkins, PhD, MS, MT(ASCP), Professor

V. Staff

Victoria Buchanan, Administrative Program Assistant
Adriana S. Callahan, Recruitment and Retention Specialist
Kara Ebisuya, Medical Laboratory Technician
Amber King, Lab Specialist
Kali Korbis, Administrative Assistant

Several guest lecturers contribute to program excellence by providing lectures and/or laboratory support. Qualified medical laboratory scientists at clinical affiliates provide instruction during the clinical rotations. These individuals participate in teaching-related workshops and many have adjunct clinical appointments at the University of Utah.

VI. Program Goals

- A. Support the goals and mission of the University of Utah.
 - 1. Assist the student in planning to meet the academic requirements for a Bachelor of Science degree from the University of Utah and completion of our NAACLS-accredited MLS program.
 - 2. Maintain appropriate and adequate academic standards consistent with those of the University.
 - 3. Provide the student with opportunities to accept the role of a professional, relate to those outside the medical community, grow personally, and adapt to change.
- B. Meet the student's requirements for education in the profession of medical laboratory science as defined by accreditation standards.
 - 1. Provide the student with the cognitive, affective, and psychomotor competencies to meet the entry requirements for the profession of medical laboratory science.
 - 2. Provide the student with an environment in which the affective domain of the professional medical laboratory scientist is developed.
 - 3. Assist the student in developing techniques and attitudes for continuing education.
- C. Provide opportunities for the student to become aware of the medical team and its responsibility for delivery of quality healthcare.
 - 1. Provide the student with opportunities to grow professionally in developing ethical and moral attitudes regarding duties and responsibilities to the patient which are consistent with a member of the healthcare team.
 - 2. Encourage interaction with persons from other medical disciplines in cooperative efforts in areas of education and development of the team concept.

VII. Program Affective Objectives

The affective learning domain addresses feelings, values, attributes, and emotions possessed by an individual. The affective domain assesses characteristics that, in part, define a medical laboratory scientist as a “professional.” MLS students are expected to conduct themselves in a professional manner. During and after completing MLS courses, students will be able to accurately or positively:

- A. Follow written and verbal instructions as well as all program policies.
- B. Adhere to established safety procedures.
- C. Maintain attendance and punctuality for classes.
- D. Display honesty, reliability and integrity.
- E. Develop ethical conduct during interactions with instructors, other students, patients, and additional members of the healthcare team.
- F. Demonstrate preparation for and attentiveness in class and lab.
- G. Maintain courteous interpersonal relationships with instructors, other students, patients, and additional members of the healthcare team to create a positive and efficient work environment.

- H. Organize tasks and maintain a clean work area.
- I. Display a conscientious and timely approach to assignments.
- J. Offer assistance to others for tasks and projects when appropriate.
- K. Accept constructive feedback given in the educational environment.
- L. Develop a methodical approach to decision-making.
- M. Maintain confidentiality of patient information and test results.
- N. Utilize laboratory equipment and supplies efficiently for the purposes intended.
- O. Demonstrate confidence in the operation of equipment and performance of laboratory test procedures.
- P. Uphold acceptable quality assurance practices.
- Q. Demonstrate a professional demeanor in behavior, attitude, and appearance.
- R. Recognize the role of the medical laboratory scientist in healthcare.
- S. Recognize the need for continuing professional development.

These affective objectives will be evaluated by faculty, staff, and clinical instructors during the MLS Program, through assessment tools such self-reflection and performance evaluations.

Unprofessional or unethical behavior will be grounds for dismissal from the MLS Program.

VIII. Expected Learning Outcomes and Career Entry Competencies for MLS Graduates

After successful completion of the University of Utah Medical Laboratory Science Program, graduates will be able to:

- A. Collect and prepare human samples for analysis. Store or transport samples for analysis using appropriate preservation methods.
- B. Follow prescribed procedures, and with adequate orientation, perform routine testing in chemistry, microbiology, immunology, immunoematology, hematology, hemostasis and molecular diagnostics.
- C. Operate and calibrate clinical laboratory instruments or equipment after proper orientation.
- D. Recognize and correct basic instrument malfunctions. Refer serious instrument problems to a senior laboratorian or a supervisor when necessary.
- E. Prepare reagents or media from a prescribed procedure, including calculating necessary computations, using an analytical balance, and adjusting the pH if necessary.
- F. Evaluate media, reagents, and standards according to established criteria.
- G. Conduct established quality control procedures on analytical tests, equipment, reagents, media, and products; evaluate results of quality control and implement corrective action when indicated.

- H. Establish basic quality control procedures, confidence limits, and reference ranges for new procedures or methods.
- I. Perform comparison studies on new or existing procedures and report results according to conventional scientific formats.
- J. Assess the reliability of laboratory results through correlation of data with common physiological conditions.
- K. In prescribed instances indicate the need for additional laboratory tests for definitive diagnostic information.
- L. Provide clinical orientation and supervision for students and new or less skilled laboratory personnel.
- M. Lecture or provide class demonstrations.
- N. Practice established safety measures.
- O. Inform supervisory personnel of questionable findings or activities such as unusual patient data, unacceptable quality control results, or unethical work practice.
- P. Recognize the need for and pursue continuing education to maintain and grow in professional competencies.
- Q. Present effective in-service continuing education sessions.
- R. Apply managerial/supervisory skills for completion of projects.
- S. Comply with applicable regulatory statutes.
- T. Practice quality assurance and performance improvement techniques for optimum laboratory analysis.
- U. Manage laboratory operations and human resources to ensure cost-effective, high-quality laboratory services.
- V. Communicate courteously and effectively with members of the healthcare team, external relations, and patients.
- W. Evaluate research and published studies to remain informed of new techniques and procedures.
- X. Utilize information management systems to provide timely and accurate reporting of laboratory data.
- Y. Behave in a professional and ethical manner.
- Z. Maintain focus on the patient to provide quality laboratory services.

IX. Essential Requirements for the MLS Profession

The following requirements for the MLS Program at the University of Utah parallel the essential functions, or task-based criteria, that employers define and expect of laboratorians when they are hired.

- A. Essential Requirements of Observation

The MLS student must be able to:

1. Observe laboratory demonstrations in which biologicals (e.g., body fluids, culture materials, tissue sections, and cellular specimens) are tested for their biochemical, hematological, immunological, microbiological, and histochemical components.
2. Characterize the color, odor, clarity, and viscosity of biologicals, reagents, or chemical reaction products.
3. Operate a clinical grade binocular microscope to discriminate among fine structural and color (hue, shading, and intensity) differences of microscopic specimens.
4. Read and comprehend text, numbers, and graphs displayed in print and on a computer monitor.

B. Essential Requirements of Movement

The MLS student must be able to:

1. Move freely and safely within a laboratory.
2. Reach laboratory bench tops and shelves, patients lying in hospital beds, or patients seated in specimen collection furniture.
3. Travel to numerous clinical laboratory sites for practical experience.
4. Perform moderately taxing continuous physical work, often requiring prolonged sitting or standing, over several hours.
5. Maneuver phlebotomy and culture acquisition equipment to safely collect valid laboratory specimens from patients.
6. Properly use laboratory equipment (e.g., pipettes, inoculating loops, and test tubes) and operate instruments to perform laboratory procedures.
7. Use a computer keyboard to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.

C. Essential Requirements of Communication

The MLS student must be able to:

1. Read and comprehend technical and professional materials including textbooks, journal articles, handbooks, and instruction manuals.
2. Follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.
3. Instruct patients prior to specimen collection.
4. Maintain the confidentiality of patient information.
5. Communicate professionally with faculty members, fellow students, staff, and other healthcare professionals verbally and in a recorded format (writing, typing, graphics, or telecommunication).

6. Compose papers and laboratory reports, and take paper, computer, and laboratory practical examinations.

D. Essential Requirements of Intellect

The MLS student must:

1. Possess these intellectual skills: comprehension, measurement, mathematical calculation, reasoning, integration, analysis, comparison, self-expression, and critical thinking.
2. Exercise sufficient judgment to recognize and correct performance deviations.

E. Essential Requirements of Behavior

The MLS student must:

1. Manage the use of time and prioritize actions in order to complete professional and technical tasks within realistic constraints.
2. Possess the emotional health necessary to effectively employ intellect and exercise appropriate judgment.
3. Provide professional and technical services while experiencing the stresses of task-related uncertainty (e.g., ambiguous test ordering or test interpretation), emergent demands (e.g., STAT test orders), and a distracting environment (e.g., high noise levels, crowding, complex visual stimuli).
4. Be flexible, creative, and adapt to professional and technical change.
5. Recognize potentially hazardous materials, equipment, and situations; proceed safely in order to minimize risk of injury to patients, self, and nearby individuals.
6. Be able to work with biological samples and chemicals.
7. Support and promote the activities of fellow students, instructors, and other healthcare professionals.
8. Be honest, compassionate, ethical, responsible, forthright about errors or uncertainty, able to critically self-evaluate, accept constructive criticism, and look for ways to improve (e.g., participate in enriched educational activities).

Satisfactory completion of the MLS Program and successful employment following graduation demands your ability to meet the above requirements. If you are uncertain as to your ability with any of these essential functions, please consult with the MLS Program Director.

X. Admission to Program

A. Program Options

The MLS Program offers the following options:

1. Traditional '2+2' curriculum includes 2 years of general education, bachelor's degree requirements, and pre-professional courses followed by 2 years of professional coursework.

2. Post-Baccalaureate option for graduates with a bachelor's degree in a biological, chemical, or physical science. Curriculum runs concurrently with the 2 years of professional coursework for students on the traditional track. Post-Baccalaureate students may opt to matriculate and pursue a second bachelor's degree or register as non-degree seeking (non-matriculated). Non-degree seeking students are not eligible for scholarships or financial aid at the University. They will be awarded a completion certificate from the Program after successful completion of all programmatic requirements. Students pursuing a second bachelor's degree must satisfy the Bachelor of Science requirements for the University.
3. Individuals currently employed in a clinical laboratory may opt to pursue certification as a Technologist in a specific discipline area (e.g., hematology, microbiology, chemistry, blood banking) through an agency such as the American Society for Clinical Pathology Board of Certification (ASCP BOC). The curriculum for each discipline follows the requirements of that content area within the Program. The student's employer must sign an agreement that they will serve as the clinical site for all required rotations. These students will be awarded a completion certificate from the Program after successful completion of all programmatic requirements for their specific discipline.

B. Requirements and Process

Students are advised to have strong backgrounds in chemistry, biology, and math. Admission is dependent upon:

1. Successful completion of prerequisite (pre-professional) university courses in chemistry, biology, math, and communications or equivalent college credit.
2. Minimum cumulative grade point average (GPA) of 2.5, minimum math and science GPA of 2.5, and evaluation of repeated coursework.
3. Evaluation of a formal application portfolio including a resume, letters of reference, and responses to essay questions.
4. Selection by the MLS Admissions Committee.

Enrollment is limited, and the Admissions Committee will select those applicants best qualified. It is highly recommended that students complete the University's general education and Bachelor of Science degree requirements before beginning professional coursework in the MLS Program. Applications indicating that three or more university general education and/or Bachelor of Science degree requirements will be unfulfilled by the start of the MLS Program may be deferred, subject to review by the MLS Program Director.

English language proficiency is critical to your success in the MLS Program. Information on demonstrating proficiency can be found on the Office of Admissions webpage.

First year students: <https://admissions.utah.edu/international/freshman/index.php>

Transfer students: <https://admissions.utah.edu/international/transfer/index.php>

University Policy 1-012: University Non-discrimination Policy

The University of Utah does not discriminate against individuals on the basis of race, ethnicity, color, religion, national origin, age, disability, sex, sexual orientation, gender, gender identity, gender expression, genetic information, or protected veteran's status ("protected class"), in employment, treatment, admission, access to educational programs and activities, or other University benefits or services.

Additionally, the University provides reasonable accommodations to ensure equal access to qualified persons with disabilities.

Retaliation against individuals for engaging in protected activities, such as filing a discrimination complaint or participating in a discrimination complaint process, is prohibited.

Inquiries regarding the University's Non-discrimination Policy and requests for accommodations may be referred to:

Director, Office of Equal Opportunity and Affirmative Action
Title IX/ADA/Section 504 Coordinator
201 South Presidents Circle, Rm.135
Salt Lake City, UT, 84112
801-581-8365 (voice/tdd)
801-585-5746 (fax)
www.oeo.utah.edu

C. Criminal Background Check

The University of Utah MLS Program requires a criminal background check of all accepted students prior to the start of the first semester of the professional component of the program. The purpose of this policy is to protect property, help ensure a safe environment in clinical training sites, and select students who exercise good judgment and ethical behavior. All accepted MLS students are required to submit to a criminal background check prior to registration for MD LB courses for fall semester. All offers of acceptance are contingent upon satisfactory results of a criminal background check. Court records are searched for any felony or misdemeanor at the state and national level as well as for other registry listings. The results are reported to the MLS Program Director. Accepted students with a clear background check are permitted to register for the program's professional courses. Students are responsible for the cost of the background check.

In the event a student has a background check showing a criminal history, the following procedure is necessary:

- If the background check establishes that the student has been convicted of a felony (or felonies) or of a misdemeanor (or misdemeanors) involving fraud, the student will not be permitted to continue in the MLS Program. A letter of discontinuance will be issued to the student.
- If the background check establishes that a student has been convicted of other types of misdemeanor(s), the student is required to:
 - Submit a written petition that describes in detail the circumstances related to the criminal offence.
 - Participate honestly and forthrightly in an interview by program officials.

Failure to submit a written petition or participate forthrightly in an interview will result in dismissal from the MLS Program. However, submission of a petition and forthright participation in an interview do not guarantee that the student will be permitted to continue in the MLS Program. A letter of discontinuance will be sent to any student who is not deemed acceptable to continue in the MLS Program. The decision of the MLS Program is final.

Students that have been convicted of a misdemeanor (or misdemeanors) should be encouraged to begin legal proceedings to have the conviction(s) expunged. Clinical affiliates may refuse to accept any student for clinical experiences who has a criminal record, regardless of whether or not the MLS Program allows the student to continue. The

MLS Program makes no guarantees that a student with a criminal record can be placed in a clinical internship.

If the MLS Program becomes aware that a student who has been accepted into the MLS Program and has begun courses has a criminal history that the student did not disclose as part of the background check process, the student will be immediately dismissed from the MLS Program.

D. Drug Testing Policy

MLS Program clinical affiliates require students to undergo drug testing prior to beginning their clinical internships. The purpose of this policy is to help ensure a safe environment in clinical training sites. The results are reported to the MLS Clinical Coordinator. A positive drug test may preclude the student from participating in clinical internships and may result in dismissal from the MLS Program. Students are responsible for the cost of the drug screen.

In the event a student has a positive drug screen, the following procedure is necessary:

- The student will be asked to immediately complete a repeat drug screen, participate forthrightly in an interview with program officials, and submit a written petition with supporting documentation that describes circumstances related to the positive drug screen.
 - If the interview/petition and supporting documentation establishes lawful use of a controlled substance, the student will be permitted to continue in the MLS Program and a letter of continuance will be issued to the student.
 - If the interview/petition establishes unlawful use of a controlled substance, information will be reviewed by program officials. A letter of continuance or discontinuance will be issued to the student.
- Failure to submit a written petition or participate forthrightly in an interview with program officials will result in dismissal from the MLS Program. Submission of a petition and forthright participation in an interview does not guarantee that the student will be permitted to continue in the MLS Program.
- Each incident will be appropriately investigated by program officials. The decision of the MLS Program is final.

E. Vaccinations

The MLS Program and associated clinical affiliates require documentation of immunization and health history to protect the student, patients, and preceptors. Therefore, all MLS students must submit a Mandatory Student Immunization and Health History Form completed by a licensed healthcare provider; appropriate documentation must be provided as requested. This form must be submitted prior to the first semester of professional courses. All MD LB courses will be dropped if the completed form is not provided. The following immunizations and respective documentation are required (note that additional immunizations may be required by affiliate institutions prior to the start of clinical rotations):

1. **Hepatitis B** - three immunizations or documentation of immunity by titer. The antibody titer must indicate immunity or immunization is required.
2. **MMR** (Measles-Mumps-Rubella) - two immunizations for anyone born during or after 1957. The antibody titer must indicate immunity or immunization is required.
3. **Tdap** (Tetanus/Diphtheria/Pertussis) - one booster shot received within the last 10 years.

4. **Varicella** (Chickenpox) - two doses of varicella vaccine administered at least 28 days apart, immunity by titer, or health-care provider verification of history of chickenpox.
5. **Tuberculosis** (TB) - a negative Interferon Gamma Release Assay (Quantiferon), negative two-step TB test (two intradermal PPD tests), or negative chest x-ray. The Quantiferon assay, two-step PPD, or x-ray must be performed within 12 months prior to the start of the fall semester. The two PPD tests must be a minimum of 10 days and maximum of 21 days apart. Note: another two-step TB test or Quantiferon assay may be required by clinical affiliates prior to the start of any internship.

Students are responsible for the cost of any service provided by a healthcare professional.

F. Student Advising

Academic advising of students is conducted with confidentiality in compliance with FERPA, serves students on a fair and equitable basis, and avoids any personal conflict of interest so that advisors may deal objectively and impartially with student issues.

The Pre-MLS academic advisor provides academic advising for students seeking to enter the MLS Program until acceptance into the program. The advisor will provide information on the MLS career, review the MLS Program and completion criteria at the University of Utah, review transcripts to evaluate progress towards completion of MLS prerequisite coursework, perform course planning to meet MLS prerequisites, discuss the MLS major application process, including acceptance and criteria, and suggest strategies for enhancing an application portfolio. Students are advised to meet with the academic advisor at least once per year to evaluate progress but are encouraged to contact the advisor with questions at any time.

Once students are accepted into the MLS Program, the MLS Program Director advises students regarding academic issues. For students seeking a B.S. Degree in Medical Laboratory Sciences, the Program Director evaluates transcripts for completion of general education requirements, bachelor's degree requirements, sufficient number of credit hours completed, minimum GPA requirements, transfer credits, and successful completion of all MLS coursework. After meeting with bachelor's degree candidates to review transcripts, the MLS Program Director makes all necessary edits to the candidate's Degree Audit Report. Graduation Clearance Reports are reviewed for any outstanding requirements not met at the time of program completion.

XI. Course Requirements

Candidates seeking a bachelor's degree must complete the University's general education and Bachelor of Science requirements in addition to the pre-professional and professional course requirements of the MLS major. Transfer coursework will be evaluated by the University during the admission process and by the MLS Admissions Committee at the time of application to the program. MLS Program Officials determine equivalency for pre-requisites as they apply to the major. The MLS Program does not have the authority to determine whether coursework will be recognized as equivalent for other majors, as satisfying a prerequisite for required courses, or as satisfying a general education or bachelor's degree requirement. (For example, the MLS Program may accept a math class as equivalent to MATH 1050 but the Chemistry department would have to determine if the course satisfied the math requirement for CHEM 1210.) A student may challenge a University course by taking the final examination for the course with the approval of the department/program officials. All MLS prerequisite (pre-professional) course requirements in biology, chemistry, math, and communications must be completed before the start of the MLS Program. Applicants with a baccalaureate degree in a biological, chemical, or physical science within the past seven years will be waived from the pre-professional requirements. Applicants with degrees awarded more than seven years ago will be evaluated individually for documented continuing education and may be required to

complete courses in human physiology, genetics, and/or biochemistry as deemed appropriate by the MLS Program Director. In addition, all students are expected to possess basic computer skills. It is also highly recommended that students complete the University's general education and Bachelor of Science degree requirements before the start of the MLS Program.

A. Prerequisite (Pre-Professional) Course Requirements

Biology

1610 <u>or</u> 2020	Principles of Biology <u>or</u> Principles of Cell Biology
2210 <u>or</u> 2030	Human Genetics <u>or</u> Genetics
2325	Human Anatomy
2420	Human Physiology

Chemistry

1210 and 1215	General Chemistry I and Laboratory
1220 and 1225	General Chemistry II and Laboratory
2310	Organic Chemistry I
3510 (BIOL 3510)	Biological Chemistry I

Mathematics

1050 <u>or</u> 1080	College Algebra <u>or</u> Precalculus
1070 <u>or</u> 1040	Introduction to Statistics <u>or</u> Introduction to Statistics and Probability

(Note: Higher level math courses may satisfy certain MLS math prerequisites).

Communication

One COMM course is required. Any communication course will satisfy this requirement; however, students are encouraged to complete a course that will also satisfy a university general education and/or Bachelor of Science requirement.

B. Professional Curriculum

First Year

MD LB 3600	Basic Techniques in Clinical Laboratory Science (lab included)
MD LB 3850	Body Fluids Analysis (lab included)
MD LB 4100	Clinical Immunology
MD LB 4110	Clinical Immunology Laboratory
MD LB 4200	Clinical Chemistry
MD LB 4210	Clinical Chemistry Laboratory
MD LB 4300	Clinical Hematology
MD LB 4310	Clinical Hematology Laboratory
MD LB 4320	Hemostasis (lab included)
MD LB 4400	Clinical Immunohematology
MD LB 4410	Clinical Immunohematology Laboratory
MD LB 4500	Pathogenic Microbiology
MD LB 4510	Pathogenic Microbiology Laboratory
MD LB 4511	Molecular Diagnostics (lab included)
MD LB 4600	Diagnostic Microbiology
MD LB 4610	Diagnostic Microbiology Laboratory
MD LB 4620	Parasitology and Mycology (lab included)

Second Year

MD LB 5100	Principles of Education and Research Design
MD LB 5130	Principles of Laboratory Management
MD LB 5900	Clinical Correlations <u>or</u>
MD LB 5910	International Clinical Correlations

Clinical Rotations

MD LB 5200	Applied Clinical Chemistry I
MD LB 5210	Applied Clinical Chemistry II
MD LB 5300	Applied Clinical Hematology I
MD LB 5310	Applied Clinical Hematology II
MD LB 5320	Applied Hemostasis
MD LB 5400	Applied Clinical Immunohematology
MD LB 5500	Applied Clinical Microbiology I
MD LB 5510	Applied Clinical Microbiology II
MD LB 5530	Applied Clinical Immunology
MD LB 5531	Applied Molecular Diagnostics

XII. Overview of Professional Courses

To be eligible for admission to the program, students must have completed all University general education requirements and must also have completed all program prerequisites with a minimum grade of C minus. Admission is contingent on maintaining a math and science GPA of 2.5 and a cumulative GPA of 2.5. Any student who fails to maintain a 2.5 GPA (in either math and science or cumulative) will not be permitted to start the professional component of the MLS Program.

The first professional year consists of two full semesters, fall and spring, followed by a condensed summer semester of intensive professional coursework, including experiences in a student laboratory setting. The second professional year includes two half semester courses taught in fall semester and one correspondence course offered in summer and fall, but the majority of courses are completed in clinical facilities where students rotate through each of the laboratory sections and receive hands-on training. Students enroll for courses and are tested, evaluated, and graded, although their "classroom" is now a working clinical laboratory. All 3000 and 4000 level MD LB courses must be completed with the minimum passing grade (C minus) before a student may begin clinical rotations. Professional courses are listed below:

A. First Professional Year:

MD LB 3600 Basic Techniques in Clinical Laboratory Science (1 Cr.)

Introduces the various disciplines of study in laboratory medicine, integrates principles of phlebotomy, microscopy, laboratory mathematics, spectrophotometers and laboratory safety.

MD LB 3850 Body Fluids Analysis (2 Cr.)

This course addresses clinical analysis of body fluids such as spinal fluid, synovial fluid, amniotic fluid, and urine. Emphasis is placed on urinalysis in the scope of renal, body water, and electrolyte physiology. The laboratory component focuses on analysis of human body fluids, correlation of data, and identification of aberrant results affecting body fluid analysis.

MD LB 4100 Clinical Immunology (2 Cr.)

Clinical Immunology is an introduction to basic immunology. The course reviews theoretical principles of immunology and provides an overview of basic immunology concepts and serologic technologies used to diagnose disease. Hypersensitivity, autoimmunity, immunoproliferative disorders, and immunodeficiencies will be discussed in detail.

MD LB 4110 Clinical Immunology Laboratory (1 Cr.)

This course focuses on representative serology and immunology principles, procedures, methodology and laboratory safety. Selected diseases will also be discussed.

MD LB 4200 Clinical Chemistry (4 Cr.)

This course addresses clinical chemical analysis of human blood and body fluids in normal and abnormal physiological conditions. Emphasis on clinical testing methods, correlation of data

and physiological condition, and identification of aberrant results affecting chemistry results. Topics include: human organ system function, endocrinology, blood gases, electrolytes, clinical laboratory calculations, and toxicology. This knowledge will also be applied to problem-solving case studies typical to the clinical setting.

MD LB 4210 Clinical Chemistry Laboratory (1 Cr.)

This course addresses laboratory applications in chemical analysis of blood and body fluid in normal and abnormal physiological conditions. Emphasis on spectrophotometric methods, interpretation of clinical quality control, measurements, troubleshooting methods, and preparing standard operating procedures.

MD LB 4300 Clinical Hematology (3 Cr.)

This course examines normal hematopoiesis, hemoglobin structure, function, synthesis and degradation; red blood cell structure, morphology and metabolic processes; the pathogenesis and pathophysiology of anemia; morphology, function, and metabolic processes of normal white blood cells and platelets; and hematologic diseases resulting in abnormal leukocyte production and morphology. Discussion of leukemias, other hematologic malignancies, and special laboratory testing procedures will be provided.

MD LB 4310 Clinical Hematology Laboratory (2 Cr.)

This course provides hands-on activities in a laboratory setting for the evaluation of erythrocytes, leukocytes, platelets and hematologic diseases. Theoretical information regarding diagnostic tests, as well as practical skills used in a clinical hematology laboratory is provided.

MD LB 4320 Hemostasis (2 Cr.)

A discussion of normal hemostasis, hemostatic disorders, the associated clinical symptoms, and the appropriate laboratory evaluation necessary for diagnosis. Laboratory sessions help develop skills necessary for performance of diagnostic tests.

MD LB 4400 Clinical Immunohematology (3 Cr.)

Course covers blood-group serology, donation and storage of blood products, pretransfusion testing, transfusion therapy, adverse reactions to transfusion, and hemolytic disease of the newborn. Students will be introduced to problems encountered in transfusion medicine.

MD LB 4410 Clinical Immunohematology Laboratory (2 Cr.)

Simulated clinical laboratory provides the opportunity to perform routine testing and resolve common serologic problems.

MD LB 4500 Pathogenic Microbiology (2 Cr.)

Provides a basic understanding of medical microbiology: characteristics of clinically significant bacteria, their biochemical profiles, media for isolation, identification of select pathogens, and antimicrobial susceptibility testing. Also introduces clinically significant viruses and mycobacteria and means for their laboratory identification..

MD LB 4510 Pathogenic Microbiology Laboratory (1 Cr.)

Laboratory section accompanying MD LB 4500. Weekly laboratory exercises highlight basic identification processes for major groups of bacterial pathogens. (1 lab per week)

MD LB 4511 Molecular Diagnostics (2 Cr.)

Introduction to nucleic acid isolation, amplification, and detection techniques used in infectious disease, genetic, and oncology testing in the clinical laboratory.

MD LB 4600 Diagnostic Microbiology (2 Cr.)

Diagnostic implications of basic microbiology learned in MD LB 4500 and MD LB 4510: Emphasis on clinical correlation of organisms infecting major organ systems; methods and rationale for laboratory identification of groups of clinically significant organisms and

distinction from the normal microbiome; and rationale for proper specimen collections, transport and processing. (2 lectures per week)

MD LB 4610 Diagnostic Microbiology Laboratory (3 Cr.)

This is an intense laboratory section accompanying MD LB 4600. All laboratory sessions are presented as simulated patient samples. The student learns processes of identification and documentation of results for identification for clinically significant bacterial pathogens. (4-5 labs per week)

MD LB 4620 Parasitology/Mycology (2 Cr.)

Introduction to parasites and fungi that are of medical importance, with focus on life cycles, diagnostic stages, and laboratory identification methods.

B. Second Professional Year:

MD LB 5100 Principles of Education and Research Design (1 Cr.)

The first section of this course discusses principles of education to include writing objectives and examination items as well as teaching techniques especially relevant to the medical laboratory. In the second section, students review major steps of a research project, including how to identify research topics, evaluate the literature, construct and test a working hypothesis, analyze and interpret data, and report results. Basic research terminology and major formats of research designs are discussed.

MD LB 5130 Laboratory Management (2 Cr.)

The study of laboratory management and supervision, including organizational principles, financial management of essential resources, human resource management and leadership theory. Didactic coursework and assignment focus on development of effective teamwork, written and oral communication skills, critical evaluation of management-related case studies, compliance and regulatory issues, cultural competency, and ethical decision-making.

MD LB 5200 Applied Clinical Chemistry I (3 Cr.)

Clinical experience performing routine chemical analysis of blood and other body fluids to establish a diagnosis, detect unsuspected disease, or monitor effects of various treatment protocols for diabetes, heart disease, and other body system disease. Experience includes both automated and manual procedures.

MD LB 5210 Applied Clinical Chemistry II (1 Cr.)

Clinical experience performing specialized chemical analysis of blood and other body fluids to measure biochemical metabolites, tumor markers, hormones, vitamins, therapeutic medications, and drugs of abuse (toxicology). Experience includes use of immunoassay, chromatography, and mass spectrometry to confirm suspected diagnosis, evaluate use of drugs of abuse, evaluate exposure to toxic elements, and to monitor effects of various treatment protocols for organ transplant and other body system diseases.

MD LB 5300 Applied Clinical Hematology I (3 Cr.)

Clinical experience performing tests to establish a diagnosis, detect unsuspected diseases, or monitor the effects of various treatment protocols for anemias, leukemias, lymphomas, and other hematologic disorders. Also includes experience in body fluid evaluation and urinalysis.

MD LB 5310 Applied Clinical Hematology II (1 Cr.)

Includes experience in a special hematology laboratory performing tests designed to aid in the differential diagnosis of leukemias, lymphomas and other hematologic malignancies. Also includes rotations in the immunologic and hematologic flow cytometry laboratories.

MD LB 5320 Applied Hemostasis (1 Cr.)

Evaluation of normal hemostasis, hemostatic disorders, the associated clinical symptoms, and the laboratory testing necessary for diagnosis. Includes laboratory practice in the performance of diagnostic tests.

MD LB 5400 Applied Clinical Immunohematology (3 Cr.)

Practical application of immunohematology principles including collection and processing of blood, component therapy, evaluation of prenatal and perinatal blood specimens, pretransfusion compatibility testing, transfusion reaction evaluations and quality assurance. Serologic testing and problem-solving skills such as antibody identification are stressed.

MD LB 5500 Applied Clinical Microbiology I (3 Cr.)

Isolating and identifying commonly encountered pathogenic bacteria from clinical specimens.

MD LB 5510 Applied Clinical Microbiology II (1 Cr.)

Isolation and identification of yeasts, molds, and parasites in the clinical laboratory, using classical identification methods, rapid methodologies, and instrumentation.

MD LB 5530 Applied Clinical Immunology (1 Cr.)

The integration of the theory and practice of immunology in a clinical setting including immunologic assays used in the diagnosis of infectious disease, autoimmune disorders, and immune deficiencies.

MD LB 5531 Applied Molecular Diagnostics (1 Cr.)

Nucleic acid isolation, identification and amplification techniques used in disease diagnosis in the clinical laboratory.

MD LB 5600 Clinical Electives (1-3 Cr.)

Students may register for up to two 1-week electives in specialty areas of the clinical lab.

MD LB 5900 Clinical Correlations (1 Cr.)

This capstone course is designed to enhance students' clinical internships by providing an opportunity for reflection of events, test results, ethical situations, troubleshooting problems, and other experiences that occur during rotations and professional practice. In addition, students will explore a disease or condition through an interdisciplinary case study writing assignment. Likewise, the students will have an opportunity to self-evaluate professional behavior.

MD LB 5910 International Clinical Correlations (1-4 Cr.)

This is a clinical experience in international laboratory medicine through University of Utah-affiliated laboratories and international community outreach locations. This course satisfies the MLS major capstone course requirement and is designed to enhance students' clinical experiences by providing an opportunity for reflection of events, test results, ethical situations, troubleshooting problems, and so forth that occur during clinical experiences and professional practice in an international setting compared with their experiences in affiliated laboratories in Utah. In addition, students will explore a disease or condition through an interdisciplinary case study writing assignment. Likewise, the students will have an opportunity to self-evaluate professional behavior.

XIII. Challenging Courses

Students may challenge an MD LB course by taking a comprehensive examination for the course with the approval of the instructor and MLS Program Director. Challenge examinations are provided to students who have significant work experience in a given professional area or to those who have taken a related course at another institution. The student must pass the examination with 70% or better to have the course requirement waived. Challenge

examinations are offered on a credit/no-credit basis; no grade is recorded for the course challenged.

XIV. Tuition and Fees

Information on tuition and fees can be found in the University of Utah online general catalog as well as in the semester class schedules, including: rates per credit hour, means of payment, late fees, refunds, etc.

Accepted applicants are required to pay a one-time, non-refundable fee of \$100 to hold their place in the MLS Program. Applicants who wish to defer their acceptance to the program for one year have the option to pay a non-refundable fee of \$150 instead of the \$100 fee.

Many of the MD LB courses require laboratory sessions for which fees are charged, ranging from \$25 to \$300 per course. Specific course fees are listed in the class schedules. Students are required to procure a long-sleeve, knee-length lab coat from the vendor of their choice prior to beginning the MLS Program. Lab coats may be purchased through Linen Services at University Hospital or a small number of used coats are available for purchase in the HSEB Teaching Laboratory.

XV. Scholarships and Financial Aid

For more information on the Medical Laboratory Science scholarships listed below, contact the MLS Program Director. For additional scholarships and financial aid information, contact the University of Utah Financial Aid and Scholarships Office at 105 Student Services Building, (SSB) 801-581-6211.

A. Scholarships for Medical Laboratory Science Students:

1. John M. Matsen Scholarship

This scholarship is awarded each academic year to one or more first year MLS students. It is based primarily on documented financial need. Applications are submitted during fall semester.

2. Karen Hageman Brown Medical Laboratory Science (MLS) Undergraduate Scholarship

This scholarship is awarded spring semester each academic year to one or more full time, matriculated students in their first academic year of the undergraduate MLS Program. It is awarded based on scholastic ability demonstrated during the first full semester of MLS courses, leadership ability/potential, community service, and dedication to the Medical Laboratory Science profession.

B. Alpha Mu Tau Fraternity (AMTF) Scholarships available through the American Society for Clinical Laboratory Science (ASCLS):

Alpha Mu Tau is a national laboratory fraternity whose purpose is the advancement of professionals in the clinical laboratory sciences. One of the prime activities of the fraternity is the granting of graduate and undergraduate scholarships for clinical laboratory science students. Additional information is available at www.ascls.org.

1. Ruth M. French Scholarship (AMTF)

This scholarship honors Ruth French for her contribution to the profession. One scholarship up to \$3,000 is awarded yearly to a graduate or undergraduate applicant.

2. Dorothy Morrison Undergraduate Scholarship (AMTF)

This scholarship is awarded in memory of Dorothy Morrison, an outstanding member of AMTF. This scholarship of up to \$2,000 is awarded yearly to a deserving student in a NAACLS accredited undergraduate clinical laboratory science program.

3. **AMTF Undergraduate Scholarships**
Several additional scholarships up to \$3,000 are awarded to deserving students in NAACLS accredited programs in clinical laboratory science and are offered in memory of AMTF members.
4. **ASCLS Education & Research Fund Undergraduate Scholarships**
Undergraduate scholarships are awarded to deserving undergraduate students in a NAACLS-approved program. Up to five scholarships for \$1,500 each are awarded yearly and one \$2000 scholarship.

XVI. Grading

Grading criteria is specified in each course syllabus. An overall grade average of 70% (C minus) in each professional course is required for continuance in the program. University policy will be followed for incompletes and withdrawals.

Courses for the second professional year (clinical rotations) are graded in a similar manner (70% [C minus] required), with examinations, practicals, and evaluations included in the final grade. A graded performance evaluation, worth 10% of the student's grade, will be completed by the Clinical Education (Teaching) Coordinator and reviewed with the student. At the completion of the rotation, the course materials are given to the faculty member responsible for the course. The faculty member will calculate the final grade and review the forms with the student as necessary. Clinical course grading policies are outlined in the "Clinical Rotation Policies."

Notes:

- Faculty reserve the right to maintain a confidential and secure pool of examination questions from year to year. This means that students may not keep their examinations. Examinations are available to review in faculty offices until the end of each course.
- Examinations in the University setting and clinical rotations are timed. Turnaround time in clinical practice is critical to quality patient care, so this concept is developed and fostered throughout the MLS curriculum.

XVII. Guidelines for Probation

- A. An unsatisfactory course grade is defined as receiving below 70% according to the grading policy of each instructor.
- B. A student will be placed on probation if the student does not achieve 70% (C minus) in any MD LB professional course or if the cumulative GPA falls below 2.5.
- C. The first semester of unsatisfactory completion of any professional MD LB course results in probation, even if the student is unsuccessful in more than one professional course. Students must repeat any professional course in which a score of less than 70% is achieved and are not permitted to begin clinical rotations.
- D. Students will not be permitted to take subsequent courses if they do not successfully complete the prerequisite course unless permission is granted by the course instructor; for example, a student who scores less than 70% in MD LB 4500 would not be permitted to enroll in MD LB 4600.

- E. The second semester in which a student achieves less than 70% in a professional MD LB course will result in that student's dismissal from the program, subject to review by Program Officials.
- F. It is the responsibility of the MLS Program Director to document the status of each student after consultation with the appropriate faculty member.

XVIII. Student Records and Privacy Rights

The Family Education Rights and Privacy Act guarantees to University students certain rights regarding their official records maintained by the University. Students, both current and former, have the right to inspect and review their educational records. Official educational records are maintained in the Office of the Registrar. Certain records are also maintained by the MLS Program in the Department of Pathology for a limited number of years. The Act also requires that the University forbid the release of personally identifiable student records or information without the written consent of the student (except “directory information,” unless the student refuses permission).

XIX. Graduation

Each student who expects to qualify for a bachelor's degree must meet with the MLS Program Director for advising and apply online through the Campus Information System (CIS) before the term deadlines set forth by the Office of the Registrar.

Term	Deadline to Apply
Fall Graduation (December)	July 1
Spring Graduation (May)	November 1
Summer Graduation (August)	April 1

Detailed information regarding graduation regalia and commencement-related activities is available at <http://registrar.utah.edu/graduation/index.php>. As part of the School of Medicine, the MLS Program participates in the School of Medicine Graduation Exercises held in May.

To graduate with a Bachelor of Science degree in Medical Laboratory Science, all general education, prerequisite science courses, and Bachelor of Science requirements must be successfully completed, as well as all professional coursework. The MLS Program requires 96 total hours of prerequisite and professional MD LB coursework. In addition, all students are required to pass a comprehensive examination with $\geq 60\%$, given at the end of the clinical rotations.

The granting of the Bachelor of Science degree or certificate of completion is not contingent upon passing an external certification or licensure exam.

The commencement ceremony for the MLS Program is held in conjunction with the School of Medicine. This is scheduled approximately two weeks after the general commencement for the University of Utah.

XX. Certification Examination

After receiving a Bachelor of Science degree and successfully completing all University and MLS Program requirements, the student is eligible to take the national certifying examination offered by the American Society for Clinical Pathology Board of Certification (ASCP BOC). <http://www.ascp.org/Board-of-Certification>.

XXI. Program Committees

The following committee compositions are suggested:

- A. Advisory
 - MLS Program Graduate Clinical Representatives
 - Pathologist(s)
 - Industry Representative
 - MLS Program Director (ex-officio)
 - MLS Associate Program Director (ex-officio)
 - MLS Faculty (ex-officio)
- B. Admissions
 - MLS Program Director
 - Faculty as assigned by the MLS Division Chief
- C. Grievance
 - Division Chief
 - At least two faculty members selected by the MLS Program Director (one from outside program)

XXII. Appeal Procedure

If an issue arises concerning a grade, an evaluation, or an issue related to a specific course, the student should discuss the situation with the course instructor. If an issue arises concerning a program policy or procedure, the MLS Program Director should be contacted. If the problem involves the MLS Program Director, the Division Chief of Medical Laboratory Sciences (MLS) should be consulted. If it appears there is justification for the concern, the student will be directed to submit a written statement addressing the problem. If it involves an instructor in the professional courses, the MLS Program Director will discuss the matter with the instructor in question to seek solutions to the problem. When the matter involves the clinical affiliate, the student is instructed to consult the Clinical Coordinator and/or the MLS Program Director. If the problem is not resolved to the student's satisfaction, a grievance committee of at least two faculty members (one from outside the program) and the Division Chief will hear the complaint of the student and the response from the faculty member involved according to policies and procedures detailed in the University's Code of Student Rights and Responsibilities.

Faculty members are qualified as professionals to observe and judge all aspects of a student's academic performance, including demonstrated knowledge, technical and interpersonal skills, attitudes and professional character, and ability to master the required curriculum. If the student still feels there has been arbitrary or capricious grading or unfair evaluation processes or practices, an appeal can be made according to the policies and procedures detailed in the University's Code of Student Rights and Responsibilities ("Student Code") www.regulations.utah.edu/academics/6-400.html.

XXIII. Student Information and Policies

A. Professional and Ethical Standards

Students are expected to maintain a high standard of ethical behavior and conduct themselves in a professional manner. Many characteristics define a Medical Laboratory Scientist as a "professional" and as one who adheres to ethical principles. In addition to affective objectives previously defined, these ethical principles also include:

1. Displaying accountability for the quality of laboratory tests performed.
2. Maintaining high standards of practice.
3. Exercising sound judgment in performing and interpreting laboratory testing.
4. Respecting patient privacy.
5. Respecting peers, instructors, patients, and other members of the healthcare team.

6. Complying with relevant laws and regulations governing the practice of medical laboratory science.
7. Seeking continuing education in order to improve technical skills and knowledge.

B. Student Behavior

Successful completion of the MLS Program does not only include acceptable academic performance, but also encompasses behaviors, attitudes, and values that students display or assume. Examples of unacceptable student behavior include:

1. Cheating on examinations, practicals, or assignments.
2. Plagiarizing assignments.
3. Failing to address faculty, clinical instructors, staff, or peers in a respectful manner verbally or in writing.
4. Repeatedly missing or arriving late for classes.
5. Failing to follow verbal or written instructions.
6. Displaying an uncooperative or negative attitude with peers, faculty, staff, clinical instructors or other members of the healthcare team.
7. Falsifying or fabricating laboratory results in any situation (student laboratory or clinical rotation sites).
8. Divulging confidential patient information or examination content.
9. Arriving impaired for classes because of substance abuse.

Students are expected to follow the University of Utah Student Code of Conduct. More information is available in the Code of Student Rights and Responsibilities at <http://www.admin.utah.edu/ppmanual/8/810.html#SECTIONV> or at <http://www.regulations.utah.edu/academics/6-400.html>.

Professional and ethical standards, as well as student behavior, will be evaluated by faculty and through self-reflection.

Unprofessional or unethical behavior will be grounds for dismissal from the MLS Program subject to review by MLS program officials.

C. Academic Dishonesty

Students are considered dishonest if any of the following situations occur at any time during progression in the MLS Program:

1. Assistance is given or received during an examination. Examples include but are not limited to:
 - unauthorized use of or possession of digital or electronic devices
 - unauthorized use of notes
 - verbal or written communications with other students
2. Information concealed on the body or in clothing is used during an examination.
3. Information is plagiarized. Plagiarism is defined as the use of words or ideas of another (from the internet or any source) without proper citation.

4. Answers are copied from other students' examinations.
5. Online examinations or quizzes are printed, distributed, or shared.
6. Information regarding examination content is shared.
7. Any violation of academic policies defined by individual course instructors.

D. Policy for Violations of Academic Honesty

If academic misconduct occurs in a didactic (University) or clinical (internship) setting with an examination or assignment, or if some other violation of academic honesty occurs, the following action will be taken:

1. A 0% will be given for the examination or assignment.
2. The student will be placed on probation with counseling by the MLS Program Director.
3. A letter documenting the incident will be placed in the student's MLS file.
4. If a second critical incident occurs, the student will be dismissed from the program subject to review by program officials.

E. Student Grievance Procedure

1. Purpose: To provide a means by which any student may:
 - a. Express a grievance or complaint, pertaining to a condition of the MLS Program without fear of reprisal.
 - b. Expect a fair, equitable and prompt response from the University of Utah MLS Program in response to any grievance.
 - c. Have access to a review process.
2. Procedure:
 - a. If a student has a grievance, the issue should first be discussed with the MLS Program Director who will make every reasonable attempt to resolve the problem to the satisfaction of all parties.
 - b. If the situation is not resolved to the satisfaction of all parties, the MLS Program Director shall convene the department's Grievance Committee.
 - c. The Grievance Committee, after talking with the student, instructor, and other parties, and examining all aspects of the grievance, will follow the student code in achieving a resolution of the grievance. The University's grievance process as defined in the Student Code will be the final action.

F. Probation and Dismissal

1. Probation: If a student fails any professional course (didactic or clinical rotation), the student will be placed on academic probation and will be interviewed by the MLS Program Director. The student will be required to repeat all failed courses. A written report will be placed in the student's MLS file.
2. Dismissal: Failure of any additional course(s) beyond the initial probation semester will be grounds for dismissal from the program. Unethical or unprofessional behavior by a student may also be grounds for dismissal from the program. If the behavior is not corrected following written notice or if considered to be a very serious first offense, dismissal will follow. Dismissal for any reason will be decided by a consensus of the MLS Program officials.

G. Student Counseling

The University of Utah provides a number of counseling services in the following areas: academic advising, career development, learning skills and reading, personal counseling, marriage/family/premarital counseling, testing services, crisis intervention, and tutoring. The University Counseling Center is located in room 426 of the Student Services Building (SSB), phone 801-581-6826. For after-hours emergencies, contact the 24/7 Crisis Line at 801-587-3000. The Academic Advising Center is located in 450 SSB, phone 801-581-8146.

H. Employment

Students are encouraged to work in a position related to the field of medical laboratory science if they so desire. However, students should not attempt to work more than part-time while in the program. Work schedules must not interfere with clinical rotation schedules or on-campus lecture and laboratory sessions.

I. Gifts

Faculty at the University of Utah are prohibited from accepting gifts from students that may in any way influence their ability to be objective regarding students' academic performance in University courses. MLS faculty should not accept gifts or favors from students if the faculty member has reason to believe that such gift or favor is motivated by a desire to secure some academic advantage. MLS students are, therefore, asked not to give gifts to faculty members.

Faculty members in the MLS Program are likewise discouraged from giving gifts as faculty to students. With the number of students in the program, there are many life events occurring within the student population. A potential problem exists in that some students will receive gifts, while others may be inadvertently missed. If a faculty member wishes to give a gift to a student on an individual basis (person to person rather than faculty to student), that is their prerogative, but it should not be done in class or as a part of any MLS Program activity.

J. Electronic and Digital Devices

Lectures and laboratory discussion sessions may be audio-taped with instructor's prior permission only. Personal electronic or digital devices are not permitted in laboratory sessions. Students violating this policy are subject to consequences outlined by each MLS faculty member as defined in individual course syllabi. Laptop computers may only be used during lectures with permission of the primary course instructor and are not permitted during examinations or when guest speakers are presenting, unless specified as acceptable by the primary course instructor. Likewise, no type of electronic or digital device is permitted during clinical rotation examinations. Examinations completed during clinical rotations may not be physically administered within the "laboratory," but may be in such locations as the library or an office. Regardless of location, whenever an examination is administered, no type of personal electronic or digital device is permitted. Clinical instructors will document all breaches of this policy. Abuse of this policy may result in additional disciplinary action and possible dismissal from the MLS Program.

Even outside of class, students should be aware that unwise or inappropriate use of social media can negatively impact the educational experience, or possibly career opportunities if conducted during clinical rotations. Derogatory, intimidating, inflammatory, or otherwise inappropriate communication will not be tolerated and may lead to disciplinary action and possible program dismissal.

K. Part-time Status

At the time of application to the MLS Program, students may elect to complete the program on a part-time basis. Part-time is defined as registering for less than the total number of credit hours required of full-time students per semester. Note that a part-time option is not available for the clinical rotation component of the MLS Program. The following policies apply to part-time status:

1. A post-baccalaureate student who elects to complete the program on a part-time basis forfeits any opportunity to begin clinical rotations on a priority basis.
2. Part-time students must complete the professional coursework (didactic component of the program) in two years or less. The “final” or clinical rotation component of the program must be completed in one year or less. Semester planning for progression in the program on a part-time basis should be discussed with the MLS Program Director.
3. Students interested in switching from full-time to part-time status after applying to the program should meet with the MLS Program Director. A formal, written petition must be submitted, by the student, for review by program officials. The MLS Program Director will notify the student of the program officials’ decision.

L. Personal Hygiene and Attire

Students should be courteous towards peers and instructors by practicing good hygiene. Clothes should also be in good condition and appropriate for the laboratory or lecture setting. Long hair must be tied back as a safety precaution in the laboratory, so as not to become caught in instrumentation, and to avoid interfering with the performance of laboratory procedures. Please refer to the *Safety Manual* for the Laboratory Dress Code Policy and the Appropriate Attire section of the Clinical Rotation Policies.

XXIV. Professional and Community Organizations

Students enrolled in NAACLS-accredited programs are eligible for free membership in the American Society for Clinical Pathology (ASCP). Benefits of membership include access to on-line journals, opportunities to apply for scholarships, attend workshops for free, participate in the National Student Honor Program, and receive e-mail updates relevant to medical laboratory science. More information is available at www.ascp.org/students.

Students are also eligible to join the American Society for Clinical Laboratory Science (ASCLS) as a student member. Refer to www.ascls.org for more information. (Note: student members of ASCLS are automatically members of the state organization, ASCLS-Utah).

In addition, students may find useful information and possible membership opportunities through the following:

- American Association for Clinical Chemistry (www.aacc.org)
- AABB (www.aabb.org)
- American Society for Microbiology (www.asm.org)
- The Association for Molecular Pathology (www.amp.org)
- American Society of Hematology (www.hematology.org)
- South Central Association of Blood Banks (www.scabb.org)

Students are also encouraged to join the University of Utah Medical Laboratory Science Professional Club (MLSPC). The MLSPC aims to create an alumni association as well as a networking community for Medical Laboratory Science and Pre-Medical Laboratory Science students at the University of Utah. It seeks to provide members with opportunities that will further

them in their academic and professional careers by contributing prestigious guest speakers, volunteer opportunities both domestic and abroad, as well as potential leadership experiences. It will also promote ethical thinking and practice parallel to academic honesty and integrity in order to produce an elite group of professionals ready to undertake the field of Medical Laboratory Science. Contact the MLSPC Faculty Advisor for more information.

XXV. Student Health Insurance

University of Utah students are strongly advised to enroll in a Health Insurance Plan. Examples can include coverage via parents' policy, coverage via a private, public, or employer-related policy, or coverage via University Student Health Services. See <https://studenthealth.utah.edu/insurance/> for more information.

In the event a student does not have health insurance, a waiver must be signed stating that the MLS Program and Department of Pathology are not responsible for payment of health costs incurred while the student is in the program.

Students receive specific instructions pertaining to safety for themselves, other students, and patients during new student orientation and their professional pre-clinical courses in addition to their instruction during the clinical experience. The introductory course MD LB 3600 has a significant segment dealing with laboratory safety.

XXVI. Campus Facilities

A. Libraries

The Spencer S. Eccles Health Sciences Library, which serves the Health Sciences Center, is located in a separate building immediately south of the Medical Center and School of Medicine and north of the Spencer F. and Cleone P. Eccles Health Sciences Education Building (HSEB). The upper level of the library is connected to the 2nd floor of the HSEB via an enclosed walkway.

The Eccles Library welcomes students, staff, and faculty. Librarians and staff on the main level offer in-person assistance. Computers, study carrels, and comfortable lounge areas are located on the main and upper levels. Wireless access to the internet is available throughout the library. The print journal collection is available on the lower level, though many journals are available electronically. Library faculty members are also available to provide instruction in the use of online databases (PubMed and Scopus) and software programs (EndNote, Excel, PowerPoint).

Visit the library website at <http://library.med.utah.edu/>. Library hours vary and are posted on the website; a map provides directions and parking options. To contact the library call 801-581-5534; or e-mail ehsl-reference@lists.utah.edu.

The Hope Fox Eccles Health Library serves as a branch of the Spencer S. Eccles Health Sciences Library and is located adjacent to the University Hospital main lobby. It is open from 8:00 a.m. until 6:00 p.m. Monday through Friday and from noon until 6:00 p.m. on Saturday and Sunday. Phone: 801-581-4685. The mission of the clinical library is to provide quality health information services to patients, visitors, and staff of University Hospital, as well as the general community.

B. Bookstores

The University Bookstore is located southwest of the Student Union Building. 801-581-6326

The Health Sciences Branch is located on the first floor of the Health Science Education Building. 801-581-8049

XXVII. Teach Out Plan

In the event the Medical Laboratory Science Program's ability to provide educational support to its students is temporarily disrupted due to an unforeseeable situation, every effort will be made to assist affected students, faculty, and support staff so that a minimal amount of disruption to the program of study is experienced. Course content including objectives, outlines, PowerPoint presentations, assessments, and so forth, can be made available to students through Canvas, the University of Utah's online educational delivery system, during temporary closure of main campus facilities. In the event of program closure, administration, faculty, support staff, and students will be notified as soon as possible so they can make appropriate plans. If the MLS Program is discontinued, students who have not completed the program will be advised by faculty or professional advisors regarding suitable options including transfer to comparable programs of study.

A. Program Closure

NAACLS will be provided the University of Utah MLS Program's Teach Out Plan within 30 days of the official announcement that the program is closing.

In the event that the MLS Program is to be discontinued the following plan will be activated:

1. Notifications will be made to administration, faculty, support staff, and students, as soon as possible, regarding program closure.
2. Program and university advising will be provided to appropriate students regarding suitable options to complete a comparable program of study at another academic institution.
3. Students who are currently completing clinical rotation experiences are guaranteed completion of internships as scheduled.

B. Natural or Unnatural Disaster

In the event that the MLS Program's ability to provide educational support to its students is disrupted due to an unforeseeable situation (natural or unnatural disaster) the following plan will be activated:

1. Coordinate responses and activities to be consistent with the University of Utah Emergency Operations Plan
<http://emergencymanagement.utah.edu/sites/default/files/university-of-utah-emergency-operations-plan-signed-2013-01-18.pdf>
2. Every effort will be made to assist affected students, faculty, and support staff so that a minimal amount of disruption to the program of study is experienced, as consistent with University Emergency Management guidelines. Such assistance may include access to course materials through the university's online educational delivery system.
3. Coordinate with other MLS Programs, as necessary and as consistent with university policy, to provide educational content to students.

Clinical Rotation Policies
Department of Pathology
University of Utah School of Medicine

Note: While the following policies are specific to the clinical rotations, students are reminded that all previous objectives, competencies, essential requirements, guidelines, standards and policies still govern their clinical rotation experiences.

I. Introduction

The clinical affiliates of the Medical Laboratory Science (MLS) Program at the University of Utah provide clinical training for MLS students. It is the goal of these institutions to assist MLS students in completing their education by providing a variety of clinical laboratory experiences and exposure to professional, academic, and business atmospheres. Furthermore, clinical affiliates assure that students are not substituted for regular qualified staff in the workplace, and that procedures are performed under the supervision of individuals deemed to be qualified by the clinical affiliate.

II. Current Clinical Affiliates and Training Sites

- Alta View Hospital (Intermountain Healthcare)
- ARUP Central Laboratory
- ARUP University Hospital Clinical Laboratory
- ARUP Sandy Donor Center
- ARUP South Jordan Clinical Laboratory
- Intermountain Medical Center Central Laboratory (Intermountain Healthcare)
- Jordan Valley Medical Center (Steward Health)
- Jordan Valley Medical Center West Valley City Campus (Steward Health)
- LDS Hospital (Intermountain Healthcare)
- Riverton Hospital (Intermountain Healthcare)
- St. Mark's Hospital (MountainStar)

III. Objectives

At the completion of the clinical rotation, each student will be able to effectively or successfully:

1. Apply previously learned skills and knowledge from the MLS professional courses to the clinical situation.
2. Interact with patients and other healthcare professionals to obtain appropriate samples for testing.
3. Communicate with laboratory personnel and others on the healthcare team.
4. Perform quality control protocols in each laboratory, including recognizing errors or discrepancies in test results and taking the appropriate corrective action.
5. Demonstrate minimum competencies in laboratory testing as delineated in each rotation.
6. Correlate laboratory findings as a basis for problem solving and decision making.
7. Utilize the laboratory computer system to adequately perform and report testing under direct supervision of the teaching technologist.
8. Recognize and apply the principles of management and education used in the laboratory.
9. Pass a comprehensive examination at the end of clinical rotations with $\geq 60\%$.

IV. Procedure for Alternates in Clinical Rotations

Due to the careful admission process used to determine the number of students accepted to the MLS Program, the possibility that students will not be accommodated in clinical internship experiences has never occurred. The priority for the MLS Program is to always obtain clinical rotation sites for students who are qualified and ready to begin the clinical experience. Given the size of the Salt Lake Valley, there is ability to obtain clinical sites as needed. Nevertheless, should some unforeseen problem occur, students in the MLS Program should know that every effort will be made to accommodate their clinical experience at the time it is scheduled. If a clinical affiliate is not available, students will be assigned rotation dates in order of their current grade point average for MD LB prefixed courses only.

V. Clinical Rotation Schedule

Every attempt is made to schedule students in clinical rotations to consider proximity issues and personal requests. However, each clinical affiliate provides the MLS Program with restrictions and limitations that may impact placements. Note that clinical rotations are assigned only to students in good standing in the MLS Program and who have successfully completed all didactic MLS courses. Rotation assignments are not made for students who are on probation or who are in their first year of a part-time schedule. Furthermore, clinical rotations will be canceled for any student who is placed on probation after the rotation schedule has been defined.

Arrangements for transportation, childcare, non-MLS classes, and work during clinical rotations are the responsibility of the student.

VI. Clinical Rotation Format

During the 18-week clinical rotation, students spend a minimum of six hours per day five days a week, in each department. A mandatory orientation session is conducted prior to the start of each clinical rotation cycle. Although several clinical affiliates provide support for the MLS Program, the majority of clinical experiences are completed at ARUP Laboratories. The clinical rotation consists of the following semester courses:

MD LB 5200 – Applied Clinical Chemistry I	3 weeks
MD LB 5210 – Applied Clinical Chemistry II	1 week
MD LB 5300 – Applied Clinical Hematology I	3 weeks
MD LB 5310 – Applied Clinical Hematology II	1 week
MD LB 5320 – Applied Hemostasis	1 week
MD LB 5400 – Applied Clinical Immunohematology	3 weeks
MD LB 5500 – Applied Clinical Microbiology I	3 weeks
MD LB 5510 – Applied Clinical Microbiology II	1 week
MD LB 5530 – Applied Clinical Immunology	1 week
MD LB 5531 – Applied Molecular Diagnostics	1 week

MLS students take MD LB 5130 (Laboratory Management) and MD LB 5100 (Principles of Education and Research Design) in the fall semester of their final year of study.

MLS students take MD LB 5900 (Clinical Correlations) in the summer or fall semester of their final year of study.

MD LB 5910 (International Clinical Correlations) is offered to MLS students during their final year of study as an alternative to MD LB 5900. Because this course includes an elective clinical rotation it must be scheduled at the end of the required clinical rotations. This course requires instructor permission and application through the University's Learning Abroad Office.

VII. Comprehensive Examination

A comprehensive examination of 100 multiple-choice questions covering all laboratory subjects must be taken after completion of clinical rotations and passed with $\geq 60\%$. Those students who score less than 60% must reference correct responses for the questions missed (cite the reference and page number where the correct answer is found). The department will approve eligibility to take the national certification examination only after this examination is successfully completed.

VIII. Grading and Evaluation Systems

A. Grading

Grades are assigned as each department rotation is completed and are a composite of three areas: cognitive, psychomotor, and affective. Grades will be determined as follows:

40-50 % = Examinations, quizzes, and study questions (cognitive)

40-50 % = Practical Examinations (psychomotor)

10 % = Clinical performance evaluation (affective)

Note: The clinical teaching coordinator and the respective MLS faculty member will determine the exact written/practical percentages for each rotation.

70% (C minus) is required in each clinical course to meet program competency requirements.

The number of written and practical examinations vary with each clinical rotation course. Typically one written examination and one practical examination are administered each week in most rotations. Written examination scores and practical examination scores will be averaged separately. These averages will be calculated along with the evaluation points to obtain the final grade for the rotation. Make-up examinations will be given for excused absences only, such as illness (with doctor's note) or death in the immediate family. The respective MLS faculty member is responsible for assigning and posting the final grade for each clinical rotation course.

Refer to the Student Information and Policy Section of this handbook for reminders regarding professional and ethical standards, student behavior, and other policies that govern grading and conduct during clinical rotations.

B. Evaluation of Student Performance

The clinical performance evaluation assesses student performance with technical skills, application of knowledge, work habits, and attitudes that are necessary in clinical laboratories. The Clinical Education (Teaching) Coordinator for each rotation course will evaluate the student's clinical performance. At the discretion of the Education Coordinator, progress and/or evaluation interviews may be attended by the MLS Program Director.

C. Student Evaluation of Instruction

At the end of each clinical rotation, the student completes an online evaluation regarding the teaching in that rotation. The confirmation of the last page of the survey should be printed and submitted either to the Education Coordinator or the MLS Faculty member serving as course director for the rotation to document completion of the survey. The survey should be completed within 24 hours of finishing the rotation. Failure to complete the evaluation could jeopardize student's progress in the program. Helpful comments and suggestions will be used to improve and strengthen the program. As students express comments, specific examples

should be used to clarify comments. These evaluations are reviewed annually by the Education Coordinators, MLS Faculty and the MLS Program Director.

IX. Minimum Competency Reports

It is the student's responsibility to keep track of these reports and to document the procedures learned as they are completed in each rotation. They are to be reviewed and signed by the Education Coordinator, who will attach them to the student's evaluation and forward them to the MLS Faculty member serving as course director for the rotation who will place them in the student's permanent file. Note that procedures listed are minimums and each Education Coordinator or designee may assign additional procedures as required.

X. Attendance, Holiday, and Sick Policy

Students should be prompt and arrive in the department at the pre-arranged time scheduled by the Education Coordinator in that rotation.

An attendance sheet will be used in each rotation to monitor attendance and punctuality. For every two unexcused occurrences of tardiness, or every one unexcused absence occurring within a rotation, five percentage points will be deducted from the final score of the rotation.

The time commitment for most clinical rotations will be a minimum of six hours per day, which includes hands-on training at the bench, homework, library assignments, examinations, and study time. Scheduled hours vary with each rotation, but typically are between 7-9 a.m. arrival times and 2-4 p.m. departure times. On occasion there may be a few days in one or two departments where rotations are scheduled for afternoon or evening hours. Notice of the specific days for these special hours will be several weeks to months in advance, so that appropriate plans can be made.

Attendance is mandatory for the full six to eight hours per day for all clinical rotations, as instructed by the Education Coordinator of each rotation. The reason for this policy is to maintain consistency in the attendance from day-to-day and from one clinical site to another. Clinical instructors will document all incidents of unexcused tardiness and absence, and the clinical course grade will be lowered according to the policy stated above. It will be the student's responsibility to sign in and out each day with the clinical instructors. Students will follow the holiday schedule of the institution where they are assigned. The final decision rests with the Education Coordinator. For attendance issues regarding work or school commitments, refer to the Policy for Employment and Class Attendance During Clinical Rotations. For questions, contact the Clinical Coordinator or MLS Program Director.

Examples of sufficiently important reasons for an excused absence from clinical rotations are:

- Illness requiring physician attention. A written note from a physician is required.
- Death in the immediate family.

The MLS Program Director or Clinical Coordinator should be notified as soon as possible in addition to the Education Coordinator and MLS Course Director.

If sick, a student must contact the Education Coordinator or section supervisor directly in the department by 8:00 a.m. so the student can reschedule their time. If a student becomes ill during the rotation, the Education Coordinator has authority to send him or her home. Excessive sick time must be made up. This re-scheduling will be at the discretion of the Education Coordinator in consultation with the respective MLS Course Director and the MLS Program Director.

Clinical instructors plan the day-to-day activity schedules for students in rotations well in advance (weeks or months) of the students' arrival. Many factors have to be considered in these pre-arranged schedules, e.g., adequate staffing, staffing assignments, availability of

instruments/equipment and so forth. Student absences disrupt these schedules. While occasional illness or other infrequent emergencies may be unavoidable, other reasons for absences will not be allowed without prior and timely approval from both the MLS Program Director, MLS Course Director and the Clinical Education Coordinator of the rotation(s) affected. Any request for a one or two day absence during the 18 weeks of clinical rotations must be submitted in writing to both people listed above, at least one month prior to that date. The MLS Program Director and Education Coordinator will respond in writing within one week with their approval or disapproval. If this becomes a disruptive pattern, additional requests will be denied. Make-up sessions may or may not occur for any absences—excused or unexcused. The Clinical Education Coordinator has complete authority to make this decision. Clinical site learning activities are extremely difficult, if not impossible, to reschedule. The student may receive a zero for that day's activities. The student will still be held responsible for all content material from the schedule for the written and practical examinations. Students may be on their own for remediation of any activities missed during an absence. Any and all absences without proper notification, according to stated policies, will be counted as unexcused absences and result in the deduction of points from the final grade, as per existing written policy. Students are encouraged to make the most of these clinical experiences.

Students should contact the Education Coordinator for their next rotation no later than the Wednesday of the week before the new rotation starts. Students must also pick up their rotation materials one week prior to the new rotation start date. Failure to do so will result in a 5% deduction from the final rotation grade. Note that some clinical rotation materials are accessed electronically.

XI. Policy for Employment and Class Attendance During Clinical Rotations

It is strongly recommended that students in the Medical Laboratory Science Program at the University of Utah do not work full-time during the 18 weeks of the clinical experience curriculum, nor attend additional, non-MLS courses. While it is recognized that students may need to work during their college years or want to take non-MLS courses, students must also understand and abide by the following policy: attendance is mandatory for the full schedule of time for all clinical rotations, as instructed by the Education Coordinator of each rotation. Clinical instructors will document all incidents of tardiness and absence, and the student's clinical course grade will be lowered according to established grading policies. Excused tardiness or absence (other than illness requiring written note from a physician) must be pre-approved by the MLS Program Director, respective course director, and the clinical site Education Coordinator. Abuse of this policy will result in additional disciplinary action with possible dismissal from the program.

Students may not request to leave early or arrive late because of work commitments. Any "time-off," except for sick leave, must be approved ahead of time. Students may be permitted to leave clinical rotations to attend MD LB 5100 Principles of Education and Research Design and MD LB 5130 Principles of Laboratory Management. However, any non-MLS courses taken must not interfere with the clinical rotation schedule. Students are advised to complete all general education and bachelor's degree requirements prior to beginning the MLS Program so as not to conflict with scheduled MLS courses, including clinical rotations. Contact the MLS Program Director for academic advising should any issues related to the completion of B.S. degree requirements arise.

XII. Student Service Work Policy

Clinical affiliates assure that students are not substituted for regular qualified staff in the workplace. Students may have the opportunity to work in the clinical laboratory outside of the scheduled rotation times. However, student employment must be voluntary, paid, and supervised. Furthermore, any service work does not substitute for clinical experiences. Note that while completing clinical internships, students are not considered employees of the facility, even if they work there at other times.

XIII. Appropriate Attire

The clinical laboratory requires that each student be clean, appropriately dressed, and neat in appearance.

- Students may be asked to provide their own white laboratory coat for use unless otherwise indicated by a clinical affiliate. These should be cleaned weekly. Students are required to adhere to the safety policies and the dress codes established by each clinical affiliate. These site-specific requirements will be discussed during the clinical rotation orientation session or through site-specific orientations.
- Students should be respectful of peers and instructors by practicing good hygiene. Note that long hair must be tied back as a safety precaution and to avoid interfering with the performance of laboratory procedures.
- Failure to abide by safety and dress code policies will result in disciplinary action with possible dismissal from the program.

XIV. Professional Conduct (Professionalism in the Work Place)

Students are expected to conduct themselves in a professional manner.

Good laboratory practice is dependent on professional and ethical behavior, along with a positive attitude. Conduct in the clinical laboratory is regularly monitored during the clinical rotations. Lapses in conduct will be brought to the student's attention by the MLS Program Director, documented, and if not corrected, will result in academic penalties not to exceed 10% of the final grade for each rotation involved.

Refer to the Student Information and Policy Section of this Handbook for reminders regarding professional and ethical standards, unacceptable behaviors, policies regarding electronic and digital devices, as well as other procedures that govern the clinical rotation experience.

XV. General Laboratory Safety (Refer to the Laboratory Safety Manual for detailed information)

- Students must adhere to the safety regulations of the clinical affiliate site.
- No eating or drinking is allowed in the laboratory.
- No smoking is allowed on campus.
- Think safety:
 - Be careful with needles and glass products, and dispose of them in the puncture resistant containers provided.
 - Use care when handling reagents. Transport all acids and bases in their safety containers.
 - No mouth pipetting is allowed in the laboratory.
 - Use proper lifting techniques to avoid back injuries.
- Wash hands and clean and disinfect the work area often with a 0.5 % Clorox solution (1:10 dilution) or other disinfectant provided.
- All persons processing blood and body fluid specimens must wear appropriate PPE.
- Lids of containers should be covered with gauze or tissue when opening.
- Gloves must be changed after completion of specimen processing.
- Properly dispose of all infectious agents, blood products and body fluids in biohazard bags to be autoclaved.

- Avoid clutter in the work area and always leave the work area neat and organized.
- All persons must remove personal protective equipment (PPE) and wash their hands after completing laboratory activities and before leaving the laboratory.

XVI. Reporting Accidents and Incidents

Any accident or incident involving MLS students should be reported immediately to the department supervisor and to the MLS Program. The accident or incident then needs to be documented promptly and thoroughly. Injuries include cuts or needle punctures as well as more serious incidents.

While enrolled in the program (including completing clinical rotations), students are required to be covered by a health insurance policy or sign a waiver form that excludes the clinical sites and the MLS Program from any responsibility for student healthcare. Students are responsible for paying any healthcare costs incurred while in the program.

XVII. Student Liability Insurance

Students at the University of Utah (including MLS students) are covered for liability protection under a University umbrella policy.

XVIII. Termination of Clinical Rotation

Any clinical affiliate, after consultation with the MLS Program Director and with proper documentation, has the right to deny or withdraw a student from the clinical rotation site if that student's work and conduct have a detrimental effect on its clients and personnel. This restriction also applies to any student who has previously been discharged by the clinical affiliate.

XIX. Clinical Affiliation Agreements

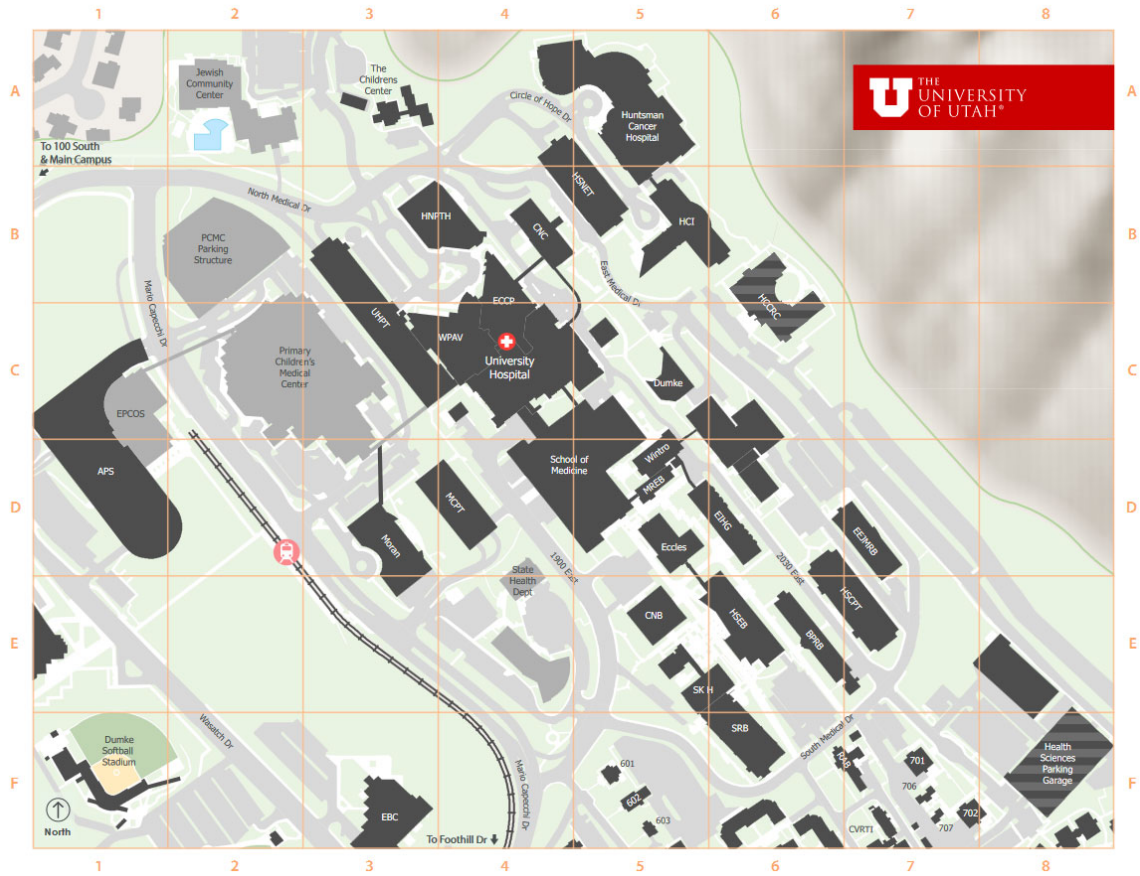
These agreements detail specific responsibilities of both the academic institution and the clinical site. Each clinical affiliate has entered into a formal agreement with the University of Utah MLS Program to provide clinical training for medical laboratory science students. Agreements are available for review from the Program Director or Clinical Coordinator.

XX. Communication During Clinical Rotations

Effective and adequate communication with students and affiliates during clinical rotations is important in ensuring an optimal educational experience. Program officials and MLS faculty interact with clinical instructors, supervisors, education coordinators and students as necessary before and during the clinical internship period. When students are in clinical rotations, formal visits are made by the MLS Program Director, Associate Program Director, or Clinical Coordinator to all clinical sites.

Health Sciences Campus Map

<https://www.utah.edu/printable-maps/>



HEALTH SCIENCES AREA

grid	building	grid	building	grid	building	grid	building
D1	Ambulatory Parking Structure (APS)	D5	Eccles Health Sciences Library, Spencer S. (ECCLES)	B6	Huntsman Cancer Institute Primary Childrens & Families Cancer Research Center (HCCRC)	B2	PCMC Parking Structure
E6	Biomedical Polymers Research (BPRB)	D6	Eccles Institute of Human Genetics, George and Dolores (EIHG)	D4	Medical Center Parking Terrace (MCPT)	C2	Primary Children's Medical Center (PCMC)
A3	Childrens Center	F5	Fort Douglas House (602)	F7	Medical Plaza North Tower (701)	C1	Primary Children's Outpatient Services Building (EPCOS)
B4	Clinical Neurosciences Center (CNC)	F5	Fort Douglas House (Interfaith) (603)	F7	Medical Plaza South Tower (702)	F7	Research Administration Building (RAB)
F7	Cardiovascular Research Training Institute, Nora Eccles Harrison (CVRTI)	B3	Health Science North Parking Terrace (HNPTH)	F7	Medical Plaza Townhouses North (706)	D5	School of Medicine
C5	Dumke Building, Ezekiel R. & Edna Watts (Dumke)	E7	Health Science Parking Center (HSCPT)	F7	Medical Plaza Townhouses South (707)	E5	Skaggs Hall, L.S. (SK H)
F1	Dumke Softball Stadium	B5	Health Sciences North East Terrace (HSNET)	D5	Medical Research & Education (MREB)	F6	Skaggs Jr. Research Building, L.S. (SRB)
F3	Eccles Broadcast Center (EBC)	F8	Health Sciences Parking Garage	D7	Medical Research Building, Emma Eccles Jones (EEJMRB)	F5	UMC House (601)
B4	Eccles Critical Care Pavilion, George S. and Dolores Dore (ECCP)	A5	Huntsman Cancer Hospital	D3	Moran Eye Center, John A. (Moran)	C4	University Hospital
E6	Eccles Health Sciences Education Building, Spencer F. and Cleone P. (EHSEB)	B5	Huntsman Cancer Institute (HCI)	E5	Nursing Building, Annette Poulson Cumming College of (CNB)	C4	West Pavilion (WPAV)
						D5	Wintrobe Research and Education Building, Maxwell M. (WINTRO)