



DEPARTMENT OF MEDICAL LABORATORY SCIENCE

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Undergraduate Handbook 2023 - 2024

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DESCRIPTION OF THE MEDICAL LABORATORY SCIENCE PROFESSION

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

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

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

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

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

(NAACLS, 2020)

DESCRIPTION OF ENTRY LEVEL COMPETENCIES OF THE MEDICAL LABORATORY SCIENTIST

At entry level, the medical laboratory scientist will possess the entry level competencies necessary to perform the full range of clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion medicine, Microbiology, Urine and Body Fluid Analysis and Laboratory Operations, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms.

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

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

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

(NAACLS 2020)

UNIVERSITY OF NORTH DAKOTA

DEPARTMENT OF MEDICAL LABORATORY SCIENCE

The Medical Laboratory Science (MLS) Program at the University of North Dakota (UND) is a university-based program that has been educating Medical Laboratory Scientists since 1949. The UND Department of MLS is located at the UND School of Medicine and Health Sciences (SMHS), 1301 N. Columbia Rd, Stop 9037 Grand Forks, ND 58202-9037. Program information can be found on the Department of MLS website: med.UND.edu/mls

ACCREDITATION

The UND MLS Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) which is located at 5600 N. River Rd, Suite 720, Rosemont, IL 60018-5119.

MISSION

The mission of the Department of Medical Laboratory Science is to provide high-quality education that prepares students to positively impact healthcare through medical laboratory practice in the state and affiliated regions.

GOALS

1. Develop and deliver a curriculum that: reflects current laboratory knowledge and best-practice; promotes critical thinking, scholarship, and life-long learning; is accessible; and aligns with University of North Dakota (UND), UND School of Medicine & Health Sciences, and National Accrediting Agency for Clinical Laboratory Sciences standards
2. Provide a student-centered environment through individualized advising, responsive mentoring/instruction, and supportive faculty/staff
3. Help address healthcare needs in the state and affiliated regions by graduating students that: meet entry-level competencies; are employable in various settings; and are positioned for leadership in medical laboratory practice
4. Promote and advocate for medical laboratory professions

UND MEDICAL LABORATORY SCIENCE PROGRAM

ESSENTIAL FUNCTIONS

Essential Functions are the physical, behavioral and cognitive attributes of an individual that are necessary to be able to be successful in an academic or clinical laboratory setting. The following Essential Functions have been defined by the UND MLS Program:

1. Communication

- a. read, comprehend, and respond to English communications (including person-to person, telephone, electronic, and written forms) in an effective, respectful, and time-sensitive manner
- b. follow oral and written directions

2. Behavior and Professional Standards

- a. demonstrate ability to perform required skills and maintain professionalism (by continuing to meet Standards of Professional Conduct) under distracting, demanding, and/or stressful circumstances
- b. adapt to an environment that may change rapidly, without warning, and in unpredictable ways
- c. maintain consistent, positive work behaviors including initiative, preparedness, dependability, persistence, and follow-through
- d. project an image of professionalism through appearance, dress, hygiene, positive attitude, and body language
- e. demonstrate appropriate interpersonal behaviors while interacting with others during program-related occurrences, including but not limited to: courtesy and cooperation; receiving and responding to constructive feedback; respect and empathy; and non-threatening conduct
- f. abstain from use of illegal, prescription, over-the-counter, experimental, recreational, or other drugs that have a significant effect upon an individual's judgment
- g. with minimal redirection, independently perform work and recognize appropriate next steps/actions

3. Critical Thinking and Application

- a. demonstrate time management skills by completing assigned tasks within time frames designated for professional competency
- b. correlate principles to practice
- c. complete work with precision and accuracy in accordance with established protocol

4. Sensory Functions

- a. differentiate colors (hue, shading or intensity) and clarity
- b. read fine print including information displayed on orders, printouts, monitors, and equipment
- c. visually analyze specimens and reagents
- d. hear and respond to sounds produced in the laboratory environment

5. Motor/Physical Functions

- a. sit/stand for prolonged periods of time
- b. safely and accurately manipulate laboratory instrumentation and equipment
- c. be able to lift 10 lbs.

DEPARTMENT OF MEDICAL LABORATORY SCIENCE

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MEDICAL LABORATORY SCIENCE CURRICULUM

Individual course descriptions and specific degree/certificate requirements are listed in the UND Academic Catalog found on the UND website <http://UND-public.courseleaf.com/>. Students are required to meet regularly with UND MLS faculty/staff to develop and monitor a program of study that aligns with these established curriculum requirements, including determining transfer and/or route-specific equivalencies, where applicable.

MLS Pre-Professional Coursework

BIOL 150/150L	General Biology I & Laboratory	4
BIOL 151	General Biology II	3
BIMD 220	Anatomy & Physiology I	3
BIMD 221	Anatomy & Physiology II	3
BIMD 301	Biochemistry.....	3
CHEM 121/121L	General Chemistry I & Laboratory.....	4
CHEM 122/122L	General Chemistry II & Chemistry Lab	4
COMM 110	Introduction to Public Speaking	3
ECON210/PSYC241/SOC326	Statistics	3
Elective	Science Category*	3
Elective	Science Category*	3
ENGL 110	College Composition I.....	3
ENGL 130	Composition II Writing for Public Audiences.....	3
Essential Studies Elective	Analyzing Worldview Category	3
Essential Studies Elective	Fine Arts Category	3
Essential Studies Elective	Fine Arts or Humanities Category	3
Essential Studies Elective	Humanities Category	3
Essential Studies Elective	Social Science Category (Intro to Psychology Recommended)	3
Essential Studies Elective	Social Science Category (Intro to Public Health Recommended).....	3
Essential Studies Elective	Social Science Category (Intro to Sociology Recommended)	3
MATH 103	College Algebra	3
MLS 110	Introduction to Medical Laboratory Science.....	2
MLS 220	Introduction to Clinical Laboratory Operations	3
MLS 226	Introduction to Clinical Immunology & Molecular Diagnostics	3
MLS 332	Introduction to Clinical Hematology	3
MLS 334	Introduction to Clinical Microbiology.....	3
MLS 339	Introduction to Evidence Based Practice	3
TOTAL MLS PRE-PROFESSIONAL CREDITS		83

**Microbiology, Organic Chemistry, Analytical Chemistry, Molecular Biology, Cell Biology, Genetics, or other advisor-approved basic science course; Note: if taking BIMD 301 from UND, one Science Elective must be CHEM 340 or 341*

Note: only courses shaded in gray (or equivalent) are required pre-professional courses for the Certificate in MLS route

MEDICAL LABORATORY SCIENCE CURRICULUM

MLS Professional Program (PP) Courses

Note: some pre-professional MLS courses may be considered as MLS PP courses depending on program route

		<u>Credits</u>
MLS 411	Clinical Chemistry I	2
MLS 412	Clinical Hematology & Hemostasis I	3
MLS 413	Clinical Immunohematology I.....	2
MLS 414	Clinical Microbiology I	3
MLS 415	Clinical Urinalysis & Body Fluids I	2
MLS 416	Clinical Immunology & Molecular Diagnostics.....	1
MLS 420	Clinical Laboratory Operations	2
MLS 421	Clinical Chemistry II	2
MLS 422	Clinical Hematology & Hemostasis II	3
MLS 423	Clinical Immunohematology II.....	2
MLS 424	Clinical Microbiology II	3
MLS 425	Clinical Urinalysis & Body Fluids II	2
MLS 431	Clinical Chemistry & Urinalysis III	2
MLS 432	Clinical Hematology & Hemostasis III.....	2
MLS 433	Clinical Immunohematology III.....	2
MLS 434	Clinical Microbiology III	2
MLS 449	Capstone in Medical Laboratory Science	3
MLS 450	Advanced Clinical Applications in Medical Laboratory Science	1
	TOTAL MLS PP CREDITS	39
	TOTAL MLS PROGRAM CREDITS	122

CATEGORICAL CERTIFICATE CURRICULUM

Individual course descriptions and specific degree/certificate requirements are listed in the UND Academic Catalog found on the UND website <http://UND-public.courseleaf.com/>. Students are required to meet regularly with UND MLS faculty/staff to develop and monitor a program of study that aligns with these established curriculum requirements, including determining transfer and/or route-specific equivalencies, where applicable. Note that each categorical certificate is considered as a MLS Professional Program for policy purposes.

CLINICAL CHEMISTRY CERTIFICATE

MLS 220	Introduction to Clinical Laboratory Operations	3
MLS 411	Clinical Chemistry I	2
MLS 415	Clinical Urinalysis & Body Fluids I	2
MLS 416	Clinical Immunology & Molecular Diagnostics.....	1
MLS 420	Clinical Laboratory Operations	2
MLS 421	Clinical Chemistry II	2
MLS 425	Clinical Urinalysis & Body Fluids II	2
MLS 431	Clinical Chemistry & Urinalysis III	2
MLS 449	Capstone in Medical Laboratory Science.....	3

CLINICAL HEMATOLOGY CERTIFICATE

MLS 220	Introduction to Clinical Laboratory Operations	3
MLS 332	Introduction to Clinical Hematology	3
MLS 412	Clinical Hematology & Hemostasis I	3
MLS 415	Clinical Urinalysis & Body Fluids I	2
MLS 416	Clinical Immunology & Molecular Diagnostics.....	1
MLS 420	Clinical Laboratory Operations	2
MLS 422	Clinical Hematology & Hemostasis II	3
MLS 432	Clinical Hematology & Hemostasis III	2
MLS 449	Capstone in Medical Laboratory Science.....	3

CLINICAL IMMUNOHEMATOLOGY CERTIFICATE

MLS 220	Introduction to Clinical Laboratory Operations	3
MLS 226	Introduction to Clinical Immunology & Molecular Diagnostics	3
MLS 413	Clinical Immunohematology I.....	2
MLS 416	Clinical Immunology & Molecular Diagnostics.....	1
MLS 420	Clinical Laboratory Operations	2
MLS 423	Clinical Immunohematology II.....	2
MLS 433	Clinical Immunohematology III.....	2
MLS 449	Capstone in Medical Laboratory Science.....	3

CLINICAL MICROBIOLOGY CERTIFICATE

MLS 220	Introduction to Clinical Laboratory Operations	3
MLS 334	Introduction to Clinical Microbiology	3
MLS 414	Clinical Microbiology I.....	3
MLS 416	Clinical Immunology & Molecular Diagnostics.....	1
MLS 420	Clinical Laboratory Operations	2
MLS 424	Clinical Microbiology II	3
MLS 434	Clinical Microbiology III.....	2
MLS 449	Capstone in Medical Laboratory Science.....	3

Note: MLS 450 - Advanced Clinical Applications in Medical Laboratory Science (1 credit) is required for students completing all four categorical certificates

MEDICAL LABORATORY SCIENCE

ROUTES OF STUDY

TRADITIONAL BACHELOR OF SCIENCE IN MLS (BS-MLS)

The traditional BS-MLS degree curriculum includes 122 credits of Pre-Professional & Professional coursework. Pre-Professional coursework includes approximately 83 credits of basic science, liberal arts/essential studies, and introductory MLS courses. Introductory MLS courses must be completed on-campus at UND. Upon successful completion of pre-professional coursework, students apply to the MLS Professional Program (PP). MLS PP coursework spans 52 weeks and consists of 39 credits of advanced MLS coursework, including a clinical practicum for course credit that is completed at an assigned affiliated medical laboratory.

Upon successful completion of BS-MLS degree requirements, the student receives a Bachelor of Science in Medical Laboratory Science degree from the University of North Dakota and is eligible for national Board Certification and entry-level practice as a Medical Laboratory Scientist (MLS; also sometimes referred to as a Clinical Laboratory Scientist or Medical Technologist).

WESTERN COLLEGE ALLIANCE FOR MEDICAL LABORATORY SCIENCE (WCAMLS)

The Western College Alliance for Medical Laboratory Science (WCAMLS) is a collaboration between UND and 12 affiliate colleges/universities to facilitate delivery of MLS curricula. Students complete three years of aligned preparatory coursework at the WCAMLS affiliate, and then apply to complete the final MLS Professional Program (PP) year at UND. The MLS PP coursework spans 52 weeks and consists of 39 credits of advanced MLS coursework, including a clinical practicum for course credit that is completed at an assigned affiliated medical laboratory.

Upon successful completion of WCAMLS degree requirements, the student receives a Bachelor of Science degree from the WCAMLS affiliate, a certificate from UND verifying completion of a NAACLS accredited MLS professional program, and is eligible for national Board Certification and entry-level practice as a Medical Laboratory Scientist (MLS; also sometimes referred to as a Clinical Laboratory Scientist or Medical Technologist).

MEDICAL LABORATORY TECHNOLOGY TO MEDICAL LABORATORY SCIENCE (MLT TO MLS)

The MLT to MLS professional program route enables students with an associate's degree from a regionally accredited institution and completion of a NAACLS accredited MLT program to earn a Bachelor of Science degree in MLS (BS-MLS). Application is required for this program route. Students will work with an academic advisor in development of an individual program of study to meet Bachelor of Science in MLS degree requirements. For students that have not yet demonstrated competency on performance evaluations, a clinical practicum for course credit will be completed at an assigned affiliated medical laboratory.

Upon successful completion of BS-MLS degree requirements, the student receives a Bachelor of Science in Medical Laboratory Science degree from UND and is eligible for national Board Certification and entry-level practice as a Medical Laboratory Scientist (MLS; also sometimes referred to as a Clinical Laboratory Scientist or Medical Technologist).

BACHELOR'S DEGREE PLUS MLS (B+MLS)

Students that have earned a Bachelor of Science (BS) or Bachelor of Arts (BA) degree from a regionally accredited college or university are eligible for the B+MLS program. The B+MLS curriculum includes specific pre-requisite (see UND Academic Catalog for required pre-requisite courses) and MLS Professional Program (PP) coursework. Students will work with an academic advisor to develop a program of study and determine appropriate application processes.

Upon successful completion of pre-requisite coursework and admission to the program, the student completes the MLS PP. MLS PP coursework spans 52 weeks and consists of 39 credits of advanced MLS coursework, including a clinical practicum for course credit that is completed at an assigned affiliated medical laboratory.

Upon successful completion of MLS curricular requirements without UND Essential Studies coursework, the student receives a Certificate in MLS from UND. Upon successful completion of MLS curricular requirements and UND Essential Studies coursework, the student receives a BS degree in MLS from UND. All graduates (certificate or BS degree) are all eligible for national Board Certification and entry-level practice as a Medical Laboratory Scientist (MLS; also sometimes referred to as a Clinical Laboratory Scientist or Medical Technologist).

UND MLS/MAYO CLINIC COHORT PROGRAM (MLS COHORT PROGRAM)

The UND MLS/Mayo Clinic Cohort Program (MLS Cohort Program) route is a collaborative program between the UND Department of Medical Laboratory Science and the Mayo Clinic in Rochester, MN. Only current employees of the Mayo Clinic Department of Laboratory Medicine & Pathology are eligible for this program route. Students in the MLS Cohort Program complete didactic coursework online and laboratory coursework at Mayo Clinic facilities, with no on-campus visits required.

Students will apply to the program and upon admittance work with an academic advisor in development of a program of study to meet pre-requisite and MLS Professional Program (PP) coursework requirements. Upon successful completion of pre-requisite coursework, the student completes the MLS PP. This coursework typically is divided into five semester blocks (including at least one summer semester) beginning in either a fall or spring semester, but can also be extended beyond five semesters. A clinical practicum for course credit is completed at the Mayo Clinic, which is an affiliated site.

Upon successful completion of MLS curricular requirements and UND Essential Studies coursework, the student receives a BS degree in MLS from UND. All BS degree graduates are eligible for national Board Certification and entry-level practice as a Medical Laboratory Scientist (MLS; also sometimes referred to as a Clinical Laboratory Scientist or Medical Technologist).

CATEGORICAL CERTIFICATES

The Categorical Certificate program route allows students to become eligible for certification and professional employment at the Medical Laboratory Science (MLS) level within a specific categorical area of the laboratory. Categorical certificates are available in the following areas: Clinical Chemistry; Hematology; Immunohematology (Blood Bank); and Microbiology. Student must have a baccalaureate degree from a regionally accredited college/university with a major in biological science or chemistry, OR a baccalaureate degree from a regionally accredited college/university with a combination of 30 semester hours (45 quarter hours) in biology and chemistry, which may be obtained within, or in addition to, the baccalaureate degree.

Students will apply to the program and upon admittance, work with an academic advisor in development of an individual program of study to meet certificate requirements. Students may choose to complete more than one categorical certificate. Coursework, including a clinical practicum for course credit, is completed online and/or at an affiliated categorical clinical site (typically the student is employed at this site), with no on-campus visits required.

Upon successful completion of Categorical Certificate requirements the student receives a certificate(s) from UND, and is eligible for entry-level practice and national Board Certification Examination(s) at the MLS level in specific certificate area(s), as follows:

Categorical Certificate	ASCP Board of Certification Exam Eligibility*
Clinical Chemistry	Chemistry (C) Exam
Clinical Hematology	Hematology (H) Exam
Clinical Immunohematology	Blood Bank (BB) Exam
Clinical Microbiology	Microbiology (M) Exam
All of the Above (with MLS 450)	Medical Laboratory Scientist (MLS) Exam

**All ASCP BOC Exams are at the MLS level (not specialist level)*

POLICIES, PROCEDURES & PROCESSES

Related Links:

UND Code of Student Life: <https://und.edu/student-life/code-of-student-life.html>

UND SMHS Student Policies: <https://med.UND.edu/policies/students.html>

UND MLS Student Resources: <https://med.und.edu/medical-laboratory-science/forms-handbook.html>

MODIFICATIONS to POLICIES, PROCEDURES and PROCESSES

- The Medical Laboratory Science Professional and Academic Standards Committee (MLS PASC) will review and modify the UND MLS Undergraduate Handbook on an annual basis. The updated handbook will be available on the UND MLS website in May of each year.
- If necessary, additional modifications may be made by the MLS PASC at any time. Modifications will be made available to students electronically and will take effect on the date of approval by the MLS PASC.
- The most current policies, procedures and processes will be applicable to all students. It is the student's responsibility to be aware of updates and/or modifications.

MLS PROGRAM POLICIES, PROCEDURES & PROCESSES

I. MLS PROFESSIONAL PROGRAM (PP) APPLICATION, ADVANCEMENT & PROGRAM STANDING

Application and acceptance to the University of North Dakota (UND) is different than the application process of the MLS PP. Acceptance (admission) to UND does not guarantee acceptance into the MLS PP, nor does acceptance to the UND MLS PP guarantee acceptance to UND. A separate application is required for each.

A. General MLS Professional Program (PP) Application Processes

1. The application process will include evaluation of pre-MLS PP coursework for the following criteria:
 - a. Completion of required pre-professional curriculum.
 - b. Cumulative GPA of ≥ 2.8 on a scale of 4.0
 - c. A maximum of two required pre-professional science and/or math courses with an initial grade of D or F can be repeated before entrance into the MLS PP curriculum.
 - d. A maximum of one letter grade of D is allowed to remain on a transcript for either a required pre-professional math or science course.
 - e. A final grade of C or higher must be earned in all required pre-professional MLS courses.
 - f. A maximum of one required pre-professional MLS course can be repeated.
 - g. No previous dismissals from MLT/CLT or MLS/CLS/MT program coursework.
2. For any unmet application criteria, the application will be considered but the unmet criteria may impact the applicant's overall ranking and result in the applicant being placed on MLS PP probation if admitted.
3. The application process may also include the following components (see the route-specific application for a complete list of required application components):
 - a. An evaluation of reference/advisor recommendations
 - b. An analysis of proficiency in meeting Standards of Professional Conduct
 - c. An evaluation of applicant-generated responses to the following:
 - i. A Critical Analysis Passage. The critical analysis is a component of the MLS PP application and is designed to evaluate critical thinking. The critical analysis passage is blindly scored by multiple MLS faculty/staff using an established rubric.
 - ii. A Written-statement (self-assessment). The written-statement is a component of the MLS PP application and is designed to assess writing skills. The written-statement is blindly scored by multiple MLS faculty/staff using an established rubric.
4. If information on the application is falsified, the applicant will not be considered for MLS PP admission. If application falsification is discovered after the applicant has already been offered admission to the MLS PP, the offer will be immediately rescinded.
5. For program routes with established application deadlines, applications received after those deadlines (which are published on the program application and/or MLS website) will be subject to ranking deductions, and will only be considered if capacity allows and the timeline for review and/or potential admission is feasible.
6. Students must complete a criminal background check in adherence with the SMHS Background Check policy as part of the application process.
7. Prospective students must review and acknowledge meeting the UND MLS Program Essential Function Requirements listed in this handbook (page 4) as part of the application process.

8. Admission to the MLS PP is competitive with the number of applicants selected based on program capacity at the time of application. Applicants are ranked based on the degree to which application criteria/components are met.
 - a. Applicants whose rankings qualify them for an available MLS PP slot will be offered full admission (i.e. if 20 MLS PP slots were available, the top 20 ranked applicants would receive full admission).
 - b. Applicants that do not initially receive full admission but whose rankings suggest that forthcoming MLS PP placement is reasonable will be given alternate admission. Alternates will be moved to full admission status if additional MLS PP slots become available and the timeframe is realistic for completion of program pre-requisites, clinical site placement, and/or required UND admission processes. Alternates being moved to full admission will be placed on probation in the Department of MLS Professional Program.
 - i. Alternates that are not moved to full admission status are eligible to re-apply to the MLS PP in the future.
 - c. Applicants that do not meet application criteria and/or whose rankings make forthcoming MLS PP placement unlikely will be denied admission to the MLS PP.
 - i. Denial of admission to the MLS PP does not impact the applicant's admission status at UND or any non-MLS PP courses the applicant is taking at UND.
9. All pre-requisite course requirements must be completed prior to beginning any MLS PP coursework.

B. Route-Specific MLS Professional Program (PP) Application & Advancement Processes

1. Traditional / WCAMLS / Bachelor's + MLS:
 - a. To be eligible for application to the MLS PP, a minimum of 59 credits (semester) or equivalent must be completed before application.
 - b. Admission into the MLS PP is competitive and a maximum of 75 students will be admitted. The MLS Admissions Committee will evaluate and rank applicants based on the following:
 - i. Pre-professional coursework criteria
 - ii. Reference/advisor recommendations
 - iii. Applicant-generated responses
 - c. Applicants will be notified via email of admission status (full admission, alternate admission, no admission). Applicants receiving alternate admission status will be placed on an alternate list in order of ranking, and moved to full admission status as/if openings become available and pre-requisite coursework requirements are met. Applicants receiving non-admission status may be eligible to reapply for a future application cycle.
 - d. Prior to advancement to the MLS PP, students must submit an unofficial transcript documenting coursework completed after MLS PP application to UND MLS for an audit (to verify pre-professional coursework requirements/criteria). The student will be notified if the audit reveals he/she is no longer eligible for MLS PP coursework.
 - e. Students transferring coursework to UND (including coursework completed after MLS PP application) must submit an official transcript to the UND Office of Admissions. Students may experience course registration issues or delays until all required transfer credits have been received.
 - f. Prior to advancement to MLS PP coursework, students must:
 - i. Complete all UND Essential Studies requirements (if applicable)
 - ii. Complete all required pre-professional MLS courses
 - iii. Complete all other required pre-professional coursework

2. MLS Cohort Program:

- a. Prior to any professional coursework, applicants must complete the program application form and submit to the MLS Cohort coordinator. To be eligible, the applicant must be an employee of the Mayo Clinic Department of Laboratory Medicine & Pathology at the time of application and throughout the duration of program coursework. If employment ends at any point during the application process or completion of coursework, applicants/students must immediately notify UND MLS personnel and they will not be permitted to pursue or complete further coursework/requirements within the MLS Cohort Program.
- b. Prior to advancement to MLS PP coursework, students must:
 - i. Complete all UND Essential Studies requirements
 - ii. Complete all required pre-professional MLS courses
 - iii. Complete all other required pre-professional coursework
 - iv. Submit a Clinical Competency Checklist completed by a clinical supervisor (for students requesting evaluation of previous clinical skills only)
- c. Note: As it applies in Probation and Dismissal policies, the MLS PP will include all MLS coursework completed at UND

3. MLT to MLS:

- a. Prior to any MLS PP coursework, students must complete the program application and submit to the MLT to MLS coordinator. To be eligible, a student must have graduated from a NAACLS-accredited MLT program and have passed a national certification exam as an MLT.
- b. Prior to advancement to MLS PP coursework, students must:
 - i. Complete all UND Essential Studies requirements
 - ii. Complete all required pre-professional courses
 - iii. Be employed by a laboratory willing to sponsor clinical rotations
 - i. Laboratory must minimum requirements as set by the Department of MLS
 - iv. Submit a Clinical Competency Checklist completed by a clinical supervisor

4. Categorical:

- a. Prior to any certificate coursework, applicants must complete the program application form and submit to the UND Categorical coordinator. To be eligible, the applicant must be an employee at the affiliated clinical site and have a baccalaureate degree from a regionally accredited college/university with a major in biological science or chemistry, OR a baccalaureate degree from a regionally accredited college/university with a combination of 30 semester hours (45 quarter hours) in biology and chemistry, which may be obtained within, or in addition to, the baccalaureate degree.
- b. Advancement throughout professional coursework is contingent upon successful academic progress.
- c. Note: As it applies in Probation and Dismissal policies, the MLS PP will include all MLS coursework completed at UND

C. MLS Professional Program (PP) Advancement/Academic Standing

1. Students in the MLS PP may be placed on program-level probation for academic and/or professional standard(s) issues. Specific policies and processes related to MLS PP probation are described throughout the MLS Undergraduate Handbook.
2. Being placed on probation within the MLS PP does not impact academic standing at UND (i.e. the student is only on probation with the MLS PP and no other UND program).

D. MLS Professional Program (PP) DISMISSAL

1. An instance of any of the following will be reviewed by the Department of MLS Professional and Academic Standards Committee and is grounds for immediate dismissal from the MLS Professional Program (PP) and may or may not be grounds for dismissal from UND, per UND policies:
 - a. Any proven evidence of academic dishonesty.
 - b. Violation of the Health Insurance Portability and Accountability Act (HIPAA) of 1996.
 - i. Disregard of the patient's right to confidentiality and/or privacy
 - ii. Accessing patient/healthcare information not needed to complete laboratory duties
 - c. Failure to comply with any institutional (University or clinical affiliate), department, program, or course policies/standards.
 - d. Any activity or behavior that is careless, disruptive, unsafe, or harmful to oneself or others.
 - e. Inability to meet UND MLS Essential Functions after reasonable accommodations pursued/attempted.
 - f. Dismissal as determined by UND MLS PP probation policies.
 - g. Dismissal as determined by the UND Code of Student Life.
2. Students dismissed from the UND MLS PP will not meet the degree requirements to earn a bachelor's degree or certificate in MLS, and will not be deemed eligible by UND MLS to take the board of certification exam.
3. Students dismissed from the UND MLS PP will not be simultaneously dismissed from UND, unless the infraction is also a violation of UND-level policies.

II. CRIMINAL BACKGROUND CHECK

- A. The UND SMHS has a policy that requires criminal background checks of students in all health related programs, which can be found on the SMHS Student Policy Website.
- B. Per the SMHS policy, the criminal background checks must be completed through *Verified Credentials*, the approved agency. Students in the MLS Cohort, Categorical, and MLT to MLS program routes must check with UND MLS Faculty/Staff to determine if their employment background checks comply with the SMHS policy.
- C. An initial criminal background check must be completed at the time of application. Some program routes may need to complete another background check at the beginning of MLS PP coursework (consult route advisor to determine if a second background check is needed).
 - a. If criminal activity or an allegation of criminal activity occurs at any point after the initial criminal background check (which occurs at the time of program application), the student must inform UND MLS faculty/staff immediately so that potential impact to academic progress can be assessed.
- D. The student is responsible for all fees associated with the *Verified Credentials* criminal background check, and must be able to pay the fees electronically at the time of background check submission.
- E. Discrepancies identified through the criminal background check will be reviewed by MLS faculty/staff and forwarded as appropriate to the SMHS Criminal Background Check Review Committee. Certain discrepancies may result in the student not being accepted into or not being allowed to continue/advance in the MLS PP.

III. ESSENTIAL FUNCTIONS & TECHNICAL STANDARDS

- A. The UND Department of MLS has defined Essential Functions (see page 4) and the UND School of Medicine & Health Sciences (SMHS) has defined Technical and Academic Standards (see Appendix 3)

that are applicable to MLS program students. All MLS program students, with or without accommodations, must meet the defined MLS program Essential Functions and SMHS Technical and Academic Standards to matriculate, progress through the program's curriculum, and complete MLS program graduation requirements.

IV. HEALTH CONDITIONS IMPACTING STUDENT PARTICIPATION

- A. Students who are known to have a condition (injury, illness, infection, environmental disease) that may negatively impact themselves, fellow students, staff, faculty or patients have a professional obligation to inform and work with UND MLS faculty/staff to develop a plan to balance their own health, educational needs and confidentiality as well as the health of others with whom they may come in contact. See the UND SMHS Health Conditions Impacting Student Participation Policy, found on the SMHS Student Policy website, for complete details (note: this policy was previously titled as "Inhibiting Conditions").

V. DISABILITY ACCESS

- A. The University of North Dakota is committed to providing equal access to students with documented disabilities. To ensure access to this class and your program, please contact DSS to engage in a confidential discussion about accommodations for the classroom and clinical settings. Accommodations are not provided retroactively. Students are encouraged to register with DSS at the start of their program. More information can be obtained by email UND.dss@UND.edu or by phone at 701.777.2664.

VI. STUDENT/GRADUATE RECORDS

- A. All files concerning students are subject to the Family Education Rights and Privacy Act of 1974. Specific information concerning student records is published in the UND Code of Student Life.
- B. The Office of Admissions and Records (Registrar) maintains official documents for students enrolled in courses at the University of North Dakota, such as the application to the University, official transcripts from other institutions, UND transcripts and other such official documents. These records are maintained permanently.
- C. The Department of MLS maintains an academic file for each student officially enrolled in an MLS program of study. These files are maintained for the duration of established records/retention timeframes.

VII. UNIVERSITY REFUND POLICY

- A. A student who drops or withdraws from the university after the beginning of instruction will be granted a refund of tuition in accordance with Undergraduate Academic Calendar published by the UND registrar (UND.edu/academics/registrar/).
- B. Current students wishing to dispute a charge must follow UND One Stop Student Services processes (<https://und.edu/one-stop/tuition-fees/payment.html>). Note that students dismissed from a MLS program route for failure to comply with UND MLS policies likely will not be eligible for a refund.

VIII. UNEXPECTED UNIVERSITY OR PROGRAM INTERRUPTION/CLOSURE

- A. In the event of an emergent situation that could impact University functions, a phone alert system at UND will notify all students, staff, and faculty of the immediate situation. Further information will be disseminated as the situation evolves. In addition, each department at UND has an established Continuity of Operations Plan (COOP) that will go into effect if the situation warrants, which includes direct notification of multiple departmental personnel (including the Program Director). The UND Department of MLS will work in cooperation with the UND Office of Emergency Management as appropriate. Course instructors will alert students to any potential course/schedule changes via Blackboard and/or email.
- B. In the event of an emergent or unforeseen circumstance arising that forces temporary or long-term closure of the program or University, within 30 days a teach-out plan will be implemented. In the teach-out plan, every effort will be made to provide students with options for the continuation of their program of study with the shortest interruption possible. Any refunds of tuition and fees would be determined by the UND Office of the Registrar.

IX. LEAVE

- A. Family leave, funeral leave, military leave, or sports participant leave will be given following the UND Code of Student Life Policies. A leave of absence may require a delay in completion of the program.

X. DRUG AND ALCOHOL SCREENING

- A. Any student may be subject to drug and/or alcohol screening as outlined in the SMHS Drug and Alcohol Screening and Education Program Policy. A positive drug/alcohol drug screen will be subject to disciplinary action up to and including immediate dismissal from the program. The complete Drug and Alcohol Screening and Education Program Policy can be found on the SMHS student policy website.

XI. EMAIL COMMUNICATIONS

- A. All students admitted to the MLS Professional Program and/or taking MLS courses will be assigned a UND email account. It is the student's responsibility to monitor this account regularly as all communication initiated from UND MLS faculty/staff will be made using this e-mail account.
- B. MLS faculty/staff will make every effort to respond to emails within 1-2 business days of receipt, unless otherwise indicated (ex. an out-of-office reply).

XII. SMHS ROOM USE & ETIQUETTE

- A. As students in UND School of Medicine & Health Sciences (SMHS) courses and programs, it is expected that you will be respectful during interactions in and around the SMHS building to ensure that it remains a professional, high-quality, and positive learning space. Specifically,
 - 1. Clean-up before leaving SMHS rooms. This includes but is not limited to: picking-up garbage and throwing it away, erasing marker boards, shutting down computers/cameras, turning off lights.

2. Be aware of room schedules. If someone else has reserved a room that you are in, it is expected that you: Clean-up and leave the room a few minutes before the next person's reservation. If you are unaware of the reservation, quickly and politely clean-up and exit the room once you are informed. Be sure to take all personal belonging with you, as typically it is not appropriate to re-enter the room after the next scheduled group has begun.
3. Be cognizant of your conversations in and around the building, which should be kept in a professional tone and avoid disrespectful and/or vulgar comments.
4. Follow UND policies regarding children/minors being brought to class:
<https://und.policystat.com/policy/12389550/latest/#autoid-2z9x9>

XIII. PROMOTIONAL IMAGES

- A. Photos and/or videos taken during MLS coursework and activities may be utilized for educational and/or promotional purposes. Students not wanting their image to be utilized for these purposes must communicate the request in writing to the UND MLS Laboratory Manager, or to their designated route advisor.

XIV. BIOHAZARD & SAFETY

- A. Students are expected to be aware of and comply with the following safety standards and/or policies:
 1. UND Bloodborne Pathogens Exposure Control Plan: <https://und.policystat.com/policy/7739092/latest/>
 2. SMHS Bloodborne Pathogen Exposure: Immediate Steps
 - a. In the event of a needle stick, sharps injury, or exposure to blood or other potentially infectious material, follow the steps outlined in this link and any clinical site requirements: <https://med.und.edu/policies/bloodborne-pathogen-immediate-steps.html>
 3. Department of MLS Safety Standard (Appendix 2)
 4. Safety/Biohazard policies and procedures at the clinical affiliate site

XV. LEARNER MISTREATMENT

- A. The Department of MLS recognizes its obligation to maintain a safe and healthy learning environment. Any learner who feels that they may have been subjected to non-protected class mistreatment of any kind by UND faculty or staff has options for addressing the mistreatment. See the UND SMHS Policy on Learner Mistreatment, found on the SMHS policy website, for complete details.

XVI. STUDENT CONCERNS & FEEDBACK

- A. If students have concerns related to the safety of themselves or others, and/or the learning environment, they should communicate that concern to the MLS Program Director or another UND MLS faculty/staff immediately.
- B. At any point, students wishing to share ideas and/or feedback about the program may do so by contacting the MLS Program Director, Brooke Solberg (brooke.solberg.1@UND.edu; 701-777-2245).

XVII. STUDENT ACADEMIC GRIEVANCES AND APPEALS

- A. Any MLS student shall be provided the opportunity to seek redress where they believe SMHS and/or MLS program policy has not been followed with respect to academic matters. This includes but is not limited to issues related to course grades, outcomes, or other academic or professional behaviors. To initiate a grievance or appeal, students must follow the UND SMHS Student Academic Grievance and Appeal Policy 3.9, which can be found on the UND SMHS website. Note that aspects of this policy are time sensitive, typically within a 30-day window.

XVIII. PROFESSIONAL & ACADEMIC STANDARDS COMMITTEE (PASC)

- A. The Department of MLS Professional & Academic Standards Committee (PASC) reviews instances where students have not met professional and/or academic standards, as outlined in the MLS Undergraduate Handbook.
 - 1. All full-time faculty and staff with instructional and/or advising roles within the Department of MLS are voting members of the PASC.
 - 2. The Department of MLS Chair serves as a non-voting advisory member and communicates all PASC decisions to students
- B. Decisions of the PASC may be eligible for petition, as described in the Student Petitions policy.

XIX. STUDENT PETITIONS

- A. Any programmatic decision made by the MLS Professional and Academic Standards Committee (PASC) is eligible for petition if: 1.) the student believes MLS program policy has not been followed, or 2.) if the student has additional information to share beyond what was originally reviewed by the PASC.
- B. To initiate a petition to the MLS PASC, students must complete the “MLS Petition Form” found on the MLS website, and submit to the MLS Program Director within 14 days of the PASC decision. Incomplete petitions, petitions received after the 14-day window, or petitions not meeting review criteria will not be eligible for review.
 - 1. As part of the MLS Petition Form, students may request to speak directly to the PASC. The student will be contacted by an MLS PASC representative to coordinate meeting time.
- C. The original PASC decision will remain in effect throughout the petition process until the PASC reviews and votes on the petition. At that time the petition decision will stand as final.
- D. The MLS Program Director will notify the student of the PASC’s petition decision within 7 days of receipt of the petition.

XX. PROBATION STATUS

- A. A student may be placed on probation within the Department of MLS Professional Program (PP) for failure to comply with academic and/or standards of professional conduct policies, or as a result of being moved from alternate to full admission status when applying to the professional program.
 - 1. Any instance of a student being placed on probation will be reviewed by the MLS Professional & Academic Standards Committee and/or Admissions Committee prior to student notification.
 - 2. A student being placed on probation will be notified in writing. For students being placed on probation outside of the admissions process, the written notification will explain the

reason/policy infraction warranting probation, requirements for continuance in the MLS PP, and duration of the probation status.

- a. The student will be directed to sign and return the written notification as acknowledgement of notification of probation status. A student's refusal or failure to provide a signature as directed will result in MLS PP dismissal.
 - b. Failure to comply with requirements for MLS PP continuance outlined in the written notification will result in MLS PP dismissal (and may or may not be grounds for dismissal from UND, per UND policies).
 - c. Students who meet the requirements established in the written notification will be allowed to continue in the MLS PP, but will be required to comply with academic and standards of professional conduct policies designated for students on probation.
- B. Students placed on probation will remain on probation for the duration of the MLS PP, unless otherwise noted in the initial written notification.

XXI. STANDARDS OF PROFESSIONAL CONDUCT

- A. The student must meet Department of MLS Standards of Professional Conduct during all program coursework and activities. If a student does not meet one or more of the standards, they will receive a Professional Conduct Evaluation Form (see Appendix 1) that outlines the unmet standard(s) and provides feedback and/or recommendations for meeting the standard(s).
1. If a student does not meet the Department of MLS Standards of Professional Conduct and the unmet standard warrants immediate dismissal per the Immediate Dismissal Policies outlined in this handbook:
 - a. For the student not already admitted to the MLS PP: any current or future application to the MLS PP will not be considered.
 - b. For the student already admitted to the MLS PP: the student is dismissed from the MLS PP, regardless of probation status.
 2. If a student does not meet the Department of MLS Standards of Professional Conduct and the unmet standard does not warrant immediate dismissal per the Immediate Dismissal Policies outlined in this handbook:
 - a. For the student not already admitted to the MLS PP: Documentation related to the unmet standard, or any future failure to meet a standard will be considered if the student chooses to apply to the MLS PP, and may impact admission status and/or program advancement.
 - b. For the student already admitted to the MLS PP but not currently on probation: The student will be placed on probation (see Probation Status policy).
 - c. For the student already admitted to the MLS PP and currently on probation: The student is dismissed from the MLS PP.
 3. All instances of unmet Standards of Professional Conduct, including probation status and program dismissals, are reviewed and approved by the Department of MLS Professional and Academic Standards Committee.
- B. The Department of MLS Standards of Professional Conduct is as follows:
The student is expected to:
1. demonstrate time management skills by completing assigned tasks within time frames designated for professional competency
 2. follow oral and written directions

3. demonstrate ability to perform required skills and maintain professionalism (by continuing to meet Standards of Professional Conduct) under distracting, demanding, and/or stressful circumstances
4. adapt to an environment that may change rapidly, without warning, and in unpredictable ways
5. correlate principles to practice
6. demonstrate neatness by making the work area and submitted documents presentable
7. attend, be punctual, and be present for the duration of all scheduled program coursework
8. maintain consistent, positive work behaviors including initiative, preparedness, dependability, persistence, and follow-through
9. complete work with precision and accuracy in accordance with established protocol
10. with minimal redirection, independently perform work and recognize appropriate next steps/actions
11. take ownership of and be accountable for your actions
12. project an image of professionalism through appearance, dress, hygiene, positive attitude, value of coursework and body language
13. read, comprehend, and respond to English communications (including person-to-person, telephone, electronic, and written forms) in an effective, respectful, and time-sensitive manner
14. demonstrate appropriate interpersonal behaviors while interacting with others during program-related occurrences, including but not limited to: courtesy and cooperation; receiving and responding to constructive feedback; respect and empathy; and non-threatening conduct
15. develop organizational, prioritization, and multi-tasking skills throughout all program coursework
16. abstain from use of illegal, prescription, over-the-counter, experimental, recreational, or other drugs that have a significant effect upon an individual's judgement
17. comply with all institutional (University and clinical affiliate), department, program, course, and laboratory policies and procedures, including safety standards/policies
18. demonstrate academic and professional integrity as outlined in departmental policies/procedures/standards
19. demonstrate responsible and appropriate use of electronic resources and communication systems (including but not limited to: cell phones, computers, tablets, email, instant messaging, social media, blogs, and websites) that is not disruptive or harmful to oneself or others

XXII. COURSE SECTIONS

- A. For all MLS courses, MLS advisors will assign students to the appropriate course section for their designated route/program of study. Students will receive registration information for these courses during required advisement sessions.

XXIII. PROCTOR INFORMATION

- A. For certain MLS courses where a face-to-face/physical proctor is required (as opposed to proctor software), it is the student's responsibility to find an acceptable proctor for verification. Falsification of proctor information will be grounds for dismissal from the program.
 1. A proctor **MUST** be a supervisor, librarian, high school principal or someone of authority. A proctor **CANNOT** be a friend, roommate, or family member. The proctor must have and use a professional email address. Proctors forfeit eligibility to enroll in any future undergraduate MLS course.

2. Proctors and their supervisory role will be verified for authenticity by MLS faculty/staff. The MLS program reserves the right to approve/disapprove all proctors; students who proctors have been disapproved must find an alternate proctor.
- B. All closed-book exams and quizzes must be proctored unless specified by course instructor, and must be proctored in the format designated by the instructor.
 - C. If a student chooses to utilize a proctor or proctoring service that requires a fee for use, the student will be responsible for those fees.

XXIV. COURSE POLICIES

- A. Students must comply with all course policies listed in MLS course syllabi. Student compliance or non-compliance with these course policies will be reflected in the MLS Standards of Professional Conduct evaluations and addressed according to the MLS Standards of Professional Conduct Policy.

XXV. GRADING

- A. Grades for MLS courses may be determined using the following learning domains:

Domains	Examples
Cognitive	Quizzes, assignments, exams
Psychomotor	Performance in the laboratory and/or at the clinical site
Affective	Standards of Professional Conduct evaluation

- B. In addition to the three domains of learning, courses may contain critical objectives. Failure of any single critical objective is equivalent to failure of the overall course.
- C. A final grade of C or higher must be earned in all Medical Laboratory Science (MLS) courses.
- D. If a student receives a “D” or “F” grade in 110, 220, 226, 332, 334, 339:
 1. The student will meet with his/her academic advisor to evaluate and adjust the program of study to facilitate re-taking of the failed course(s). Repeated courses may impact program admission status and/or program advancement.
- E. If a student receives an initial “D” or “F” grade or does not successfully complete one or more critical objectives in any MLS Professional Program (PP) course (MLS 411, 412, 413, 414, 415, 416, 420, 421, 422, 423, 424, 425, 431, 432, 433, 434, 449, 450), the following rules apply:
 1. For the student not on probation:
 - a. The student is placed on probation for the remainder of the MLS PP.
 - b. The student will receive a written remediation plan developed by UND faculty/staff that will establish competence for continuance in the MLS PP. The written remediation plan will be signed by the instructor of the course and/or route coordinator, the MLS Program Director, and the student.
 - i. Successful compliance with the written remediation plan will result in the student earning a letter grade of “C” for the course, and MLS PP continuance.
 - ii. Failure to comply with the written remediation plan will result in the student retaining the original “D” or “F” grade in the course and being dismissed from the MLS PP.

2. For the student on probation:
 - a. The student is dismissed from the MLS PP and continuance in the program.

XXVI. HEALTH INSURANCE

- A. Students are responsible for having a health insurance policy throughout the duration of coursework completed at a clinical affiliate site. UND program officials will complete verification of this policy.
- B. Students are responsible for payment of health-related bills that occur, including needle sticks or bloodborne/airborne pathogen exposure.

XXVII. LIABILITY INSURANCE

- A. The University will provide professional liability insurance for University students and faculty/staff liaisons with maximum limits of \$1,000,000 per occurrence and \$5,000,000 annual aggregate.

XXVIII. CLINICAL SITE PLACEMENT

General Information/Procedures:

- A. All clinical sites affiliated with the UND MLS program have met equivalency requirements which ensure that the site can provide an experience that meets defined UND MLS learning objectives.
- B. The UND SMHS MLS program guarantees clinical placement at an affiliated site for all students admitted/advanced into the MLS Professional Program. The program does not guarantee that the assigned clinical placement will be at one of the students' selected preferences or desired locations.
- C. If a student declines the clinical site placement assigned to them, they will not be allowed to continue in the program.
- D. Students should not begin communication with the assigned clinical site until authorization to do so has been given by UND MLS faculty/staff.
- E. Clinical site placements will be made in accordance with defined procedures established for each program route.

Route-Specific Clinical Site Placement Procedures:

- F. MLS Cohort Students:
 1. Clinical site placement will be at the Mayo Clinic, or other Mayo Clinic affiliate. Students will work with the program route coordinator to determine specific dates and/or locations for clinical practicum experiences.
- G. Categorical Certificate Program Students:
 1. Prior to application, students will work with the route coordinator to determine the clinical site assignment, including specific dates and/or locations for clinical practicum experiences.
- H. MLT to MLS Students:
 1. Students will work with the program route coordinator to determine a clinical site assignment, including specific dates and/or locations for clinical practicum experiences.
- I. All Other Program Students (Traditional, WCMLS, Bachelor's+MLS):
 1. A list of clinical sites affiliated with the UND MLS program can be found on the UND MLS webpage (note: a clinical site's ability to take a student is variable and subject to change based

on their current resources; UND MLS personnel will provide students with the most current clinical site list at the beginning of the clinical site placement process).

2. Students who have been awarded full admission will be contacted by UND clinical education coordinators via email with a link to the online clinical site request survey and a list of current clinical site options. The student must complete the survey by date indicated in the email; surveys received after this date will not be considered in the first round of clinical site placement. This survey will ask for students' top three preferred clinical site locations (from the provided list). Additionally, certain clinical sites may implement one or more of the following, which will be communicated to students:
 - a. Interviews. Some clinical sites require that the student interview for a placement position. In these situations, student selection is determined by the clinical site; UND MLS does not participate in the interviews or student selection process.
 - b. Microbiology rotation. Students assigned to clinical sites that are unable to meet UND MLS defined learning objectives in the area of microbiology will be required to complete a Clinical Intensive Rotation in microbiology on-campus at UND, or be assigned a separate clinical site for the microbiology portion of the rotation.
 - c. Unique requirements. Certain clinical sites may have other unique requirements including but not limited to: drug/alcohol testing, onboarding processes, vaccination requirements, additional caregiver's background check, etc. Note that there may be a fee associated with these requirements for which the student is responsible.
3. To complete clinical site placements, the Department of MLS Clinical Site Placement Committee (CSPC) will utilize clinical site preference survey responses and faculty/staff feedback related to which type of learning environment best supports individual student learning. When possible, students will be assigned a clinical site that was one of their indicated preferences. Each year, clinical sites will communicate to UND MLS the maximum number of student rotations they can accommodate. When the number of students requesting a site exceeds the communicated maximum capacity, a lottery will be utilized to determine placement. UND MLS will provide contact information to clinical sites for all students indicating preference (first, second, or third) of a site that requires an interview. Students will be contacted by the clinical site to set-up the interview. Students not selected by lottery or by an interviewing site will be contacted by the MLS CSPC for their next three preferences of remaining available clinical sites. A lottery will again be utilized to determine placement when demand exceeds capacity.
4. Students with alternate admission status will be entered into the clinical placement process upon advancement to full admission status.

XXIX. CLINICAL PRACTICUM HOURS

- A. The scheduling of required clinical practicum rotations is influenced by workflow at the assigned clinical affiliate and the desire to expose students to various skillsets. As such, clinical practicum experiences may occur during any shift, in accordance with when a site can best facilitate learning/skillset exposure.

XXX. EMPLOYMENT/SERVICE WORK

- A. Service Work is defined as performance of duties expected of a paid employee by an unpaid student. Upon demonstration of proficiency in the learning environment, students may perform clinical tests under the direct supervision of a qualified laboratorian employed by the clinical affiliate. However, at

no time is the unpaid student expected or allowed to perform service work and/or replace paid employees.

- B. A student can seek out optional employment at his/her own discretion. However, employment is not a required program component and does not fall under any academic jurisdiction.

XXXI. UNEXPECTED DISCONTINUANCE OF A CLINICAL AFFILIATE

- A. When circumstances outside of a clinical affiliate's control lead to an unexpected discontinuation of the clinical site affiliation that a student has been or is assigned to, the Department of MLS will secure an alternate clinical site to allow the student to finish his/her program of study.
- B. Placement at alternate clinical site will depend on site availability and may not be at the student's preferred site or location, or offer the student's preferred scheduling. When an alternate site is secured, UND MLS will provide the student with an individualized program completion plan, which may include a delayed program completion date.

XXXII. REMOVAL FROM A CLINICAL AFFILIATE SITE

- A. In the event that a clinical affiliate chooses to remove a student from the clinical placement at their facility, and the removal does not warrant dismissal per existing dismissal policies, the situation will be reviewed by the Department of MLS Professional & Academic Standards Committee (PASC) to determine if the removal circumstances would inhibit/impede placement at another clinical affiliate or future ability to meet entry-level and employment competencies.
 - 1. If the PASC determines that placement at an alternate site is reasonable/feasible, the Department of MLS will attempt to secure an alternate clinical site to allow the student to finish their program of study. Placement at alternate clinical site will depend on site availability and may not be at the student's preferred site or location, or offer the student's preferred scheduling. If an alternate site is secured, UND MLS will provide the student with an individualized program completion plan, which may include a delayed program completion date.
 - a. If the alternate clinical site also chooses to remove the student from their clinical placement, the student will be dismissed from the program.
 - 2. If placement at an alternate site is determined to be unreasonable/not feasible, the student will be dismissed from the program.

XXXIII. NATIONAL CERTIFICATION EXAM ELIGIBILITY

- A. The issuing of a baccalaureate degree, certificate or categorical certificate in MLS from the University of North Dakota is NOT contingent upon the student passing any type of national/external certification examination.

ROUTE-SPECIFIC POLICIES, PROCEDURES & PROCESSES

I. TRADITIONAL / WCAMLS / BACHELOR'S + MLS

A. Clinical Practicum Attendance Expectations

1. Daily Schedule:
 - a. Students are expected to report to their clinical affiliate on time, as scheduled.
 - b. Students are expected to stay at the clinical affiliate until dismissed by the bench instructor for the day.
 - c. Asking to leave early is not appropriate.
 - d. Student compliance or non-compliance with attendance expectations will be reflected in the MLS Standards of Professional Conduct evaluations
2. Personal/Illness Leave Time
 - a. A maximum of three personal/illness leave days are granted. Personal/illness leave is only meant to be used when absolutely necessary. Personal leave cannot be utilized during the final week of a clinical rotation.
 - b. For each day of an illness related absence, the student MUST call the department/area they are currently rotating in at least ½ hour before the scheduled arrival time, AND email a UND MLS Faculty/Staff.
 - c. Personal/illness time must be taken in a minimum of a four-hour block.
 - d. The student may request personal leave time only with the consent of the clinical affiliate site liaison. Notification must be made at least five days in advance.
3. Make-Up Time:
 - a. If the student exceeds more than the total number of personal/illness days allowed, each day in excess must be made up in full, which may delay graduation and/or certification exam eligibility.
 - b. The clinical affiliate may decline the opportunity for make-up time to be completed at their institution and an alternative site placement may occur.
 - i. Placement at alternate clinical site will depend on site availability and may not be at the student's preferred site or location, or offer the student's preferred scheduling. When an alternate site is secured, UND MLS will provide the student with an individualized program completion plan, which may include a delayed program completion date and certification exam eligibility.
4. Extended Time Off:
 - a. If the student needs an extended period of time off, the clinical affiliate site liaison, the student, and UND MLS faculty/staff will assess the situation and make appropriate adjustments if possible, and in accordance with established policies (ex. Leave, Inhibiting Conditions, etc.).
 - b. An alternate clinical affiliate site may need to be assigned. Conditions of alternate clinical site placement are outlined in section I.A.3.b.i.
5. Inclement Weather:
 - a. Notification of university/college closure due to inclement weather does not mean the student is excused from attending clinical practicum for that day.
 - b. For each day of inclement weather, the student MUST call the department/area they are currently rotating in at least ½ hour before the scheduled arrival time to determine whether attendance is appropriate.

B. Other Clinical Practicum Expectations

1. Students must coordinate their own transportations to and from clinical sites.
2. Students are responsible for securing their own housing for the duration of the clinical rotation.
3. Students must complete the entirety of the scheduled clinical rotation to be eligible for program completion.

II. MLT to MLS

A. Clinical Practicum Didactic Coursework

1. For individuals meeting the following criteria, clinical practicum coursework is competency based.
 - a. Graduated from a NAACLS accredited MLT program
 - b. Passed an MLT national board exam
 - c. Currently working as an MLT or have worked as an MLT in the past 5 years.

B. Clinical Practicum Attendance Expectations

1. The student will work with the UND MLT to MLS coordinator and/or the clinical liaison at his/her assigned clinical affiliate to establish attendance expectations for each rotation area.

III. MLS COHORT PROGRAM

A. Proctor Policies:

1. In addition to the proctor information in the general policies, Mayo Clinic proctors forfeit eligibility to enroll in either the UND MLS Cohort Program at Mayo Clinic or UND MLS Categorical program.
2. A proctor **MUST** be a supervisor, education specialist or someone of authority within the Mayo Clinic System.
3. All closed book exams/quizzes must have proctor supervision unless specified by the course instructor. Proctor verification (electronic or handwritten) will be required for all proctored exams/quizzes.

B. Competency Checklist:

1. Completion of this checklist is required prior to starting their senior semesters for any student requesting evaluation of previous clinical skills. If a student does not complete the competency checklist they will be required to enroll in all courses as scheduled.
2. The checklist is used to indicate the level of performance a cohort student has already achieved for each of the following major areas of the laboratory: Microbiology, Chemistry, Immunohematology, Hematology, Coagulation, Body Fluids, Urinalysis, Phlebotomy, and Immunology.
3. A Clinical supervisor must complete this from by checking the appropriate column (highest level attained) following an assessment of the cohort student's past work history.

C. Intensive Laboratory Sessions:

1. There are mandatory senior intensive laboratory sessions which all students must attend. These intensive laboratory sessions take place over a one to two week period and are only offered at designated dates and starting times. Intensive labs are taught by UND instructors in Stable-350.
2. Students are required to attend all sessions as there are no makeup labs. Students must make their own arrangements with department supervisors so that they can attend.

D. Clinical Intensive Rotations (CIR's):

1. There are four mandatory core clinical rotations (MLS 431, 432, 433, 434). These clinical rotations are taught by Mayo Clinic education specialists. All CIR's are only offered on designated dates and starting times.
2. Special coagulation is taught by Mayo Clinic education specialists on designated dates and starting times.

E. MLS Cohort Signature Page:

1. The Signature Page for MLS Cohort students will include the traditional acknowledgement items found on the last page of this handbook, as well as additional items specific to the program route. UND MLS faculty/staff will provide students with this Signature Page.

APPENDIX 1: Department of MLS Standards of Professional Conduct Evaluation Form

DEPARTMENT OF MLS STANDARDS of PROFESSIONAL CONDUCT EVALUATION

Student		Date		Course(s)/Area(s)	
MEETS	The student is meeting the standard				
NEEDS IMPROVEMENT	The student needs improvement and requires re-direction/feedback to move toward 'meets'				
DOES NOT MEET	The student is not meeting the standard and requires further action beyond re-direction/feedback, as described in the MLS professional policies				

+

	STANDARD OF PROFESSIONAL CONDUCT	MEETS	NEEDS IMPROVEMENT	DOES NOT MEET
1	demonstrate time management skills by completing assigned tasks within timeframes designated for professional competency			
2	follow oral and written directions			
3	demonstrate ability to perform required skills and maintain professionalism (by continuing to meet Standards of Professional Conduct) under distracting, demanding, and/or stressful circumstances			
4	adapt to an environment that may change rapidly without warning and in unpredictable ways			
5	correlate principles to practice			
6	demonstrate neatness by making the work area and submitted documents presentable			
7	attend, be punctual, and be present for the duration of all scheduled program coursework			
8	maintain consistent, positive work behaviors including initiative, preparedness, dependability, persistence, and follow-through			
9	complete work with precision and accuracy in accordance with established protocol			
10	with minimal redirection, independently perform work and recognize appropriate next steps/actions			
11	take ownership of and be accountable for your actions			
12	project an image of professionalism through appearance, dress, hygiene, positive attitude, value of coursework and body language			
13	read, comprehend, initiate and respond to English communications (including person-to person, telephone, electronic, and written forms) in an effective, respectful, and time-sensitive manner			
14	demonstrate appropriate interpersonal behaviors while interacting with others during program-related occurrences, including but not limited to: courtesy and cooperation; receiving and responding to constructive feedback; respect and empathy; and non-threatening conduct			
15	develop organizational, prioritization, and multi-tasking skills throughout all program coursework			
16	abstain from use of illegal, prescription, over-the-counter, experimental, recreational, or other drugs that have a significant effect upon an individual's judgment			
17	comply with all institutional (University and clinical affiliate), department, program, course, and laboratory policies and procedures, including safety standards/policies			
18	demonstrate academic and professional integrity as outlined in departmental policies/procedures/standards			
19	demonstrate responsible and appropriate use of electronic resources and communication systems (including but not limited to: cell phones, computers, tablets, email, instant messaging, social media, blogs, and websites) that is not disruptive or harmful to oneself or others			

Evaluator(s):

Comments/Feedback:

In order to move to a "meets" designation for the standards indicated above, the following actions are suggested:

-
-
-

Student Signature: _____

Date: _____

-By signing this form, I am indicating that I have read and understand the comments provided in this evaluation and/or written plan.

APPENDIX 2: Department of MLS Laboratory Safety Standard

University of North Dakota
Department of Medical Laboratory Science
Grand Forks, ND

STANDARD: Laboratory Safety

Effective: 04/10/2019

PURPOSE

This standard establishes general safe practices in the Medical Laboratory Science (MLS) biohazard laboratory. Control measures described in this standard are essential for protecting all laboratory occupants from potential biological, chemical, and physical hazards.

ROLES AND RESPONSIBILITIES

Safety Coordinator - Provide guidance and ensure safety in the laboratory

Faculty/Staff/GTA's - Comply with all MLS safety policies, report unsafe working conditions as well as accidents to the MLS Safety Coordinator or Program Director

Students - Comply with all MLS safety policies

DEFINITIONS

Work Practice Controls – Also known as Administrative Controls, are changes in work procedures such as written safety policies, rules, posted signs, alarms and warnings, and training with the goal of reducing the duration, frequency, and severity of exposure to hazardous chemicals or situations.

Personal Protective Equipment (PPE) – Equipment worn or used to minimize exposure to physical, chemical, or biological agents. Per OSHA regulations, personal protective equipment must prohibit blood or other potentially infectious materials (OPIM) from passing through to clothing, skin, eyes, mouth, or other mucous membranes.

Sharps – Objects that can penetrate skin, such as needles, scalpels, broken glass, and capillary tubes. If blood or other potentially infectious materials (OPIM) are present or may be present on the sharp, it is considered a contaminated sharp.

Standard precautions – 1st tier of basic infection control. A set of precautions applied to all patients designed to reduce the risk of transmission of bloodborne and other potentially infectious materials (OPIM) in the health care setting. All blood, tissue, body fluids, secretions, and excretions (except sweat) are considered potentially infectious.

STANDARD: Laboratory Safety

GENERAL SAFETY

Engineering Controls

Engineering controls are controls designed to reduce work related hazards. They reduce exposure by removing, eliminating, or isolating the hazard.

Biological Safety Cabinet (BSC)	<ul style="list-style-type: none">• Act as a primary barrier to contain hazardous biological materials within the cabinet and away from the laboratorian's breathing zone.• Includes three classes (I, II, III). Class II is further divided into four types: A1, A2, B1, B2.• The MLS biohazard lab has two (2) class II, type A2 BSC's. <p>Students will be instructed on the use of the BSC's as needed based on the class and activity.</p>
Centrifuge Safety Equipment	<ul style="list-style-type: none">• Protects against release of aerosols• Includes safety cups, rotors with covers, removable rotors, and O-rings• Always check tubes for cracks prior to placing in centrifuge
Pipetting Aids	<ul style="list-style-type: none">• For the safe use of pipettes• Bulbs, pipettes with cotton plugs
Splatter shields	<ul style="list-style-type: none">• Protects from exposure when opening specimen containers or manipulating specimens in a manner that would cause a splash <p>Students will be instructed on the use of splatter shields as needed.</p>
Enclosed Electrical Incinerators	<ul style="list-style-type: none">• Reduce splatter when decontaminating bacteriological loops <p>The MLS Biohazard laboratory uses only enclosed electrical incinerators.</p>

Personal Protective Equipment

PPE is not a substitute for good engineering or work practice controls. PPE is used in conjunction with these controls to ensure safety.

Fluid Resistant Laboratory Coats	<p>Fluid resistant laboratory coats are to be worn at all times in the MLS Biohazard laboratory. It is at the discretion of the instructor whether or not students need to wear lab coats while in the lab for lecture only. Cloth lab coats are not allowed.</p> <ul style="list-style-type: none">• Lab coats must be long sleeved, knee length, button in the front<ul style="list-style-type: none">○ Students<ul style="list-style-type: none">▪ White lab coats▪ Purchase through UND MLS Club or UND Bookstore.○ Faculty/Staff/GTA's - Ceil Blue lab coats
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STANDARD: Laboratory Safety

	<ul style="list-style-type: none">• Remove lab coat immediately if it becomes contaminated with hazardous materials. Place contaminated lab coats into marked biohazard bags for laundering.• Remove lab coat prior to leaving the laboratory. Lab Coats are not to be worn outside of the MLS biohazard lab.• Lab coats are laundered by UND laundry services. Bringing lab coats home for laundering is prohibited.
Disposable Gloves	<p>Disposable gloves must be worn in the laboratory when performing tasks where contact with blood or OPIM is possible, including surfaces contaminated with these materials.</p> <ul style="list-style-type: none">• Immediately remove gloves that are contaminated with blood or OPIM and discard in the biohazard containers. Wash hands before putting a new pair of gloves on.• Gloves should be replaced when they are torn, punctured, wet, or when their ability to function as a barrier is compromised.• Do not wash or reuse disposable gloves• Remove gloves and wash hands when finished working with hazardous materials as well as prior to leaving the laboratory at any time.• Remove gloves using an aseptic technique and discard in the biohazard waste. <p>Nitrile gloves are provided by the MLS department. In the case of allergy to provided gloves, other alternatives will be offered by the department.</p>
Heat Resistant Gloves	<p>Protect hands when handling hot objects.</p> <ul style="list-style-type: none">• Use when removing autoclave bins or handling other hot objects such as electrophoresis gels.
Face and Eye Protection	<p>Safety goggles, face shields, or other eye and face protectors need to be worn when performing activities that pose a risk of splashing hazardous substances into the eyes, nose, or mouth.</p> <ul style="list-style-type: none">• This type of exposure may happen during tasks such as handling chemicals or infectious materials.• Prescription eyeglasses do not offer adequate protection from splashes. Safety glasses that fit over the top of prescription glasses will be required. <p>Safety goggles and/or face masks, including those that fit over the top of prescription glasses, will be provided by the MLS department.</p>

STANDARD: Laboratory Safety

Sharps Engineering Controls

Additional engineering controls to use when working with sharps.

Handling of Sharps	<p>Handle all needles, contaminated glass, and other sharp objects with extreme caution.</p> <ul style="list-style-type: none">• Never purposely bend, break, or re-cap used needles.<ul style="list-style-type: none">○ *OSHA exception: if the procedure requires the contaminated needle to be recapped or removed and no alternative is feasible and the action is required by the medical procedure. If such action is required, then the recapping or removal of the needle must be done by the use of a mechanical device or a one-handed technique.• Needles with safety shields will be used for all phlebotomy procedures.• After use, place all sharps in a puncture-resistant container.
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Work Practice Controls

Infection Control	<ul style="list-style-type: none">• Mouth pipetting is prohibited.• Hands must be kept away from the mouth, nose, eyes, and other mucous membranes to reduce the possibility of self- inoculation.• Use Biohazard wipes when removing the tops from specimens to minimize aerosol production.• Never leave a discarded tube or infected material unattended or unlabeled.• The laboratory door must be kept shut (do not prop open). This is to ensure proper air exchange as well as to reduce the risk of biohazard contamination outside of the laboratory.
Hand Hygiene	<p>Hands should be washed after the following:</p> <ul style="list-style-type: none">• Removing gloves• Before leaving the laboratory• Before and after contact with patients• Before eating, drinking, smoking or the manipulation of contact lenses• Immediately after accidental contact with blood or OPIM. <p>Steps recommended for proper handwashing:</p> <ol style="list-style-type: none">1. Wet hands with clean running water (warm or cold) and apply soap.2. Rub hands together to make a lather and scrub the well. Be sure to scrub the back of the hands, between fingers, and under nails.3. Continue rubbing hands for at least 20 seconds. Rinse hands well under running water.4. Dry hands using a clean towel.5. Use towel to turn off faucet.

STANDARD: Laboratory Safety

Decontamination	<p>Decontaminate works areas with an appropriate chemical germicide after a spill with blood or OPIM and at the end of every laboratory session.</p> <ul style="list-style-type: none">• Wear gloves and appropriate PPE when decontaminating work surfaces.• Commercial disinfectants or a 1:10 bleach solution will be used in the MLS biohazard lab. <p>For biohazard spills, notify an instructor immediately.</p> <ul style="list-style-type: none">• Decontaminate work space as soon as feasible after a spill of blood or body fluid.• PPE and double gloves should be worn when doing the clean-up.• Saturate the spill with bleach and let sit for five minutes.• If glass is involved, the spill should be picked up with a biohazard disposal kit or dustpan and broom and disposed of in a biohazard labeled sharps container. <p>For chemical spills, notify an instructor immediately.</p> <ul style="list-style-type: none">• Follow all directions indicated in the SDS sheet.• For small spills, use the chemical spill kit located in the safety cabinet• For large spills, contact the UND Office of Safety Immediately.
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Emergency Aids

Eyewash Stations	<p>In the event of a hazardous splash to the eye, immediately notify an instructor and proceed to the nearest eyewash station.</p> <ul style="list-style-type: none">• Active the eyewash.• Hold eyes open and flush for a minimum of 15 minutes, rolling the eyes left to right and up and down to ensure all surfaces are flushed.• Contact lenses may be gently taken out during flushing. <p>Immediately seek medical attention after flushing is complete.</p>
Emergency Shower	<p>In the event of a hazardous splash to the body, immediately notify an instructor and proceed to the nearest emergency shower.</p> <ul style="list-style-type: none">• Stand under the shower and turn water on• Remove contaminated clothing while under the shower• Rinse for a minimum of 15 minutes. <p>Immediately seek medical attention after rinsing is complete.</p> <p>Instructors will notify UND Office of Safety in the event the emergency shower is used to control the water from leaking to other areas of the building.</p>

STANDARD: Laboratory Safety

Waste Disposal

Students will be instructed on proper waste disposal during safety orientation.

Biohazard Waste Containers	Specimens, including blood and OPIM must be disposed of in a container that prevents leakage. <ul style="list-style-type: none">• Containers must have a biohazard label and be red/orange in color.• All gloves, plastic transfer pipettes, and anything contaminated with blood or OPIM that is not a sharps must be disposed of in biohazard waste.
Sharps containers	All needles and contaminated glass are to be disposed of in sharps containers. <ul style="list-style-type: none">• Sharps containers must be impervious, puncture resistant, and rigid to eliminate the potential of physical injury.• All needles and lancets as well as contaminated glass slides, tubes, and glass pipettes.
Regular Waste	All other waste not sharps or considered biohazard. <ul style="list-style-type: none">• Paper towels used for handwashing and decontaminating work surfaces• Paper products such as wrappers and lens paper/kim wipes.

Personnel Responsibility

Food, Drink, and Like Substances	<ul style="list-style-type: none">• Eating, drinking, smoking, handling contact lenses, or putting anything in one's mouth while in the laboratories where there is a reasonable likelihood of occupational exposure is prohibited.• Chewing gum is acceptable, however, it must be placed in one's mouth prior to entry into the lab.• Food and beverages are not to be kept in refrigerators, freezers, shelves, cabinets, counter or bench tops or other areas designated as work areas by the laboratory or where blood or other potentially infectious materials are present or may be present.
Cosmetics, Hair, Beards, and Jewelry	<ul style="list-style-type: none">• Application of cosmetics in the MLS biohazard lab is prohibited. Hand cream is not considered a cosmetic and is permitted.• Hair longer than chin length must be secured back to prevent it from contact with contaminated materials and away from moving equipment such as centrifuges.• Jewelry or flowing scarves that can become caught in equipment or hang into infective materials need to be removed prior to working in the lab.• Men with beards should observe the same precautions provided for long hair. Long beards are dangerous because they can get caught in moving equipment. All beards are sources of bacterial contamination.

STANDARD: Laboratory Safety

Personal Property	<ul style="list-style-type: none">• Backpacks must be stored either in the shelves on the south side of the MLS laboratory or in the student's respective learning community.• Personal electronic device (e.g., cell phone, laptop computer) use by students is not allowed in the MLS biohazard lab. Personal electronic devices may be kept in backpacks stored in their designated area in the lab.<ul style="list-style-type: none">○ Computers with keyboards/mice are available at every lab bench station for student use.○ Instructor's may, at times, use personal electronic devices in areas away from sample testing in order to facilitate teaching.
Hygiene	<p>Students must maintain proper hygiene while in attendance in the MLS laboratory. This includes, but is not limited to:</p> <ul style="list-style-type: none">• Showering/bathing daily• Maintaining clean, neat hair• Using personal care products (e.g. deodorant, toothpaste)<ul style="list-style-type: none">○ Fragrant products such as perfume, cologne, other strongly scented products, and essential oils are not to be used in the MLS laboratory.

CLOTHING/ATTIRE




























Clothing	<p>Proper clothing is essential while working in the laboratory. The dress code for the laboratory is casual: jeans/pants/scrubs are all OK. Absolutely no shorts. Dresses are allowed provided they cover the entire leg (see clearance guideline below) and are worn with socks and appropriate shoes.</p> <ul style="list-style-type: none">• Clothing must be clean, neat, and in good repair.• Clothing must fit appropriately.• Legs must be completely covered in the laboratory.<ul style="list-style-type: none">○ No skin may show around ankle area.○ Pants must not have any holes.• Pants or dresses may not drag on the floor when in the lab. Dresses and pants should have 1 to 1.5 inches of clearance from the floor.
Footwear	<ul style="list-style-type: none">• Shoes should be comfortable, rubber-soled, and cover the entire foot, including the toe, heel, and instep. Clog-style shoes are not appropriate footwear, even if they have a heel strap.• Canvas shoes are not recommended as they may absorb chemicals and infectious fluids. Leather, vinyl, or synthetic fluid-impermeable material is suggested.

STANDARD: Laboratory Safety

CHEMICAL SAFETY

<p>General</p>	<ul style="list-style-type: none"> Students will be informed as to any hazards associated with chemicals used for laboratory tasks. Always add acid to water Never smell a chemical directly. Vapors should be wafted toward the nose if necessary. Safety Data Sheets for all chemicals are kept in the SDS binder in the Safety Cabinet in the MLS Biohazard lab. All chemicals must be properly labeled. Primary containers must be labeled according to the Globally harmonized System (GHS) of classification. Secondary containers may either be labeled according to GHS regulations or by the National Fire Protection Agency (NFPA) regulations. <p>Note: It is a direct OSHA violation to re-label primary containers.</p>
<p>NFPA labeling</p>	<p>Department of Transportation requirement for shipping chemicals.</p> <ul style="list-style-type: none"> Color coded diamond with four quadrants <ul style="list-style-type: none"> Blue: Health hazard Red: Fire hazard Yellow: Reactivity hazard White: Indicates water reactivity, radioactivity, biohazards, or other special hazards. Numbers are used in the upper three quadrants to signal the degree of emergency <ul style="list-style-type: none"> A numerical scale of 0 to 4 is used <ul style="list-style-type: none"> 0 = no unusual hazard 1 = minor hazard 2 = moderate hazard 3 = severe hazard 4 = extreme hazard <div style="text-align: center;"> <p>HEALTH HAZARD 4 - Deadly 3 - Extreme Danger 2 - Hazardous 1 - Slightly Hazardous 0 - Normal Material</p> <p>FIRE HAZARD Flash Points 4 - Below 73° F 3 - Below 100° F 2 - Below 200° F 1 - Above 200° F 0 - Will Not Burn</p> <p>INSTABILITY HAZARD 4 - May Detonate 3 - Shock and Heat May Detonate 2 - Violent Chemical Change 1 - Unstable if Heated 0 - Stable</p> <p>SPECIFIC HAZARD Acid.....ACID Alkali.....ALK Corrosive.....COR Oxidizer.....OX Radiation Hazard...☢ Use No Water... ☞</p> </div>

STANDARD: Laboratory Safety

GHS	<p>United Nations Globally Harmonized System of Classification and Labeling of Chemicals.</p> <ul style="list-style-type: none"> • Chemical Labeling requirements include: <ul style="list-style-type: none"> ○ Product Identifier, Supplier Identification, Precautionary, Hazard Pictograms, Signal Word-severity of hazard, Hazard Statements, Precautionary statements. ○ Pictograms included in chart below. <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">GHS Labels</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> <tr> <td style="font-size: small;">Oxidizers - Can burn without air, or can intensify fire in combustible materials.</td> <td style="font-size: small;">Explosives - May explode if exposed to fire, heat, shock, friction.</td> <td style="font-size: small;">Corrosives - May cause skin burns and permanent eye damage.</td> </tr> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> <tr> <td style="font-size: small;">Gases Under Pressure - Gas released may be very cold. Gas container may explode if heated.</td> <td style="font-size: small;">Flammable if exposed to ignition sources, sparks, heat. Some substances may give off flammable gases.</td> <td style="font-size: small;">Toxic to aquatic organisms and may cause long lasting effects in the environment.</td> </tr> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> <tr> <td style="font-size: small;">Toxic material which may cause life threatening effects even in small amounts and with short exposure.</td> <td style="font-size: small;">May cause serious and prolonged health effects on short or long term exposure.</td> <td style="font-size: small;">Irritant - May cause irritation (redness, rash) or less serious toxicity.</td> </tr> </table> </div>				Oxidizers - Can burn without air, or can intensify fire in combustible materials.	Explosives - May explode if exposed to fire, heat, shock, friction.	Corrosives - May cause skin burns and permanent eye damage.				Gases Under Pressure - Gas released may be very cold. Gas container may explode if heated.	Flammable if exposed to ignition sources, sparks, heat. Some substances may give off flammable gases.	Toxic to aquatic organisms and may cause long lasting effects in the environment.				Toxic material which may cause life threatening effects even in small amounts and with short exposure.	May cause serious and prolonged health effects on short or long term exposure.	Irritant - May cause irritation (redness, rash) or less serious toxicity.
																			
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FIRE SAFETY and EVACUATION

Fire Safety/ Evacuation	<p>All students receive safety training each semester they are enrolled in a MLS laboratory course, including summer session. Staff/Faculty/GTA's receive safety training upon hire. The following fire safety information is included in the training:</p> <ul style="list-style-type: none"> • Location of fire extinguishers • Location of fire pull box • Location of all exits • Map of floor plan with exits and evacuation routes <p>In addition, evacuation routes and designated storm shelter areas is covered.</p> <p>Open flames are prohibited in the MLS biohazard lab, including the use of Bunsen burners.</p>
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STANDARD: Laboratory Safety

REFERENCES

1. CLSI. Clinical laboratory safety; approved guideline third edition. CLSI document GP17-A3. Wayne, PA: Clinical and Laboratory Standards Institute; 2012.
2. OSHA. Occupational Safety and Health Standards Toxic and Hazardous Substance, Bloodborne pathogens, standard 1910.1030. [Internet] Washington, DC: [Updated 2017 Sept 18] Available from www.OSHA.gov

APPENDIX 3: Technical & Academic Standards for Matriculation, Progression, and Graduation



Technical and Academic Standards for Matriculation, Progression, and Graduation For all SMHS students

Section: 3

Policy number: 3.11

Responsible Office: Student Affairs and Admissions

Issued: 08.04.14

Latest Review (Bylaws): 07.28.2022

Latest Approval (Faculty Council): 08.01.2022

Policy Statement

This policy describes the broadly defined technical standards essential for UND SMHS students. All graduates of this institution must use professional knowledge, skills, and attitudes to function in a wide variety of settings. All graduates of the health professions must be able to function in a variety of healthcare settings and render a wide spectrum of patient care. Thus, all students, with or without accommodations, must meet the academic and technical standards to matriculate, to progress through the curriculum, and to complete the graduation requirements.

Reason for POLICY

The technical standards are designed to ensure the graduation of capable, well-rounded, and appropriately trained scientists and healthcare providers. Each program within the UND SMHS may have additional technical standards specific to the requirements of the program. The following standards attempt to ensure that graduates of the school possess the background to pursue specialties.

SCOPE of POLICY

This policy applies to:

√Deans, Directors, and Department Heads

√Faculty

√Managers and supervisors

√Staff

√Students

Others:

WEB SITE REFERENCES

Policy Office: <http://www.med.und.edu/policies/index.cfm>

Responsible Office: <https://med.und.edu/student-affairs-admissions/index.html>

DEFINITIONS

Matriculate	The enrollment status of a student at the UND SMHS.
Academic Standards	<i>Academic standards</i> refer to acceptable demonstrations of mastery in various disciplines, before and after matriculation, as judged by admissions practices faculty members, examinations, and other measurements of performance.
Technical Standards	<i>Technical standards</i> required for completion of biomedical, clinical and translational sciences, and health professions degrees consist of certain minimum essential abilities and characteristics to assure that candidates for admission, promotion, and graduation are able to complete the entire course of study and participate fully in all aspects of training, with or without reasonable accommodation. When a student's ability to perform a technical standard is not met, the student must demonstrate alternative means and/or abilities to perform the specified activity.

RELATED INFORMATION

Biomedical Sciences (MS, PhD)	https://med.und.edu/biomedical-sciences/graduate-studies.html
Clinical and Translational Science (MS, PhD)	https://und.edu/programs/clinical-translational-science-phd/index.html
Indigenous Health (PhD)	https://med.und.edu/public-health/phd/index.html
Medicine (MD)	https://med.und.edu/index.html
Medical Laboratory Science & Histotechnology (BS, MS, certificate programs)	https://med.und.edu/medical-laboratory-science/index.html
Occupational Therapy (OTD)	https://med.und.edu/occupational-therapy/
Physical Therapy (DPT)	https://med.und.edu/physical-therapy/index.html
Physician Assistant Studies (MPAS)	https://med.und.edu/physician-assistant/index.html
Public Health (MPH)	https://med.und.edu/public-health/masters/index.html
Sports Medicine (BSAT, MSAT)	https://med.und.edu/sports-medicine/index.html

CONTACTS

General questions about this policy can be answered by your department's administrative office. Specific questions should be directed to the following:

Subject	Contact	Telephone/FAX	Email contact
Policy clarification	Student Affairs	777.4221/777.4942	saa@und.edu
Policy format	Dean's Office	777.2514/777.3527	judy.solberg@und.edu

PROCEDURES

1. **Matriculation:** Each academic program within the SMHS maintains admissions standards and procedures that must be fulfilled prior to being accepted into a degree-granting program. Once a student has successfully matriculated into a program, they can enroll and register for classes to begin working toward that degree. To continue to enroll in a program the student must meet or exceed the minimal academic standards and work toward meeting the technical standards and capacities of the academic program. Each program within the SMHS publishes these standards on their websites. These standards are set to describe minimal criteria needed to successfully complete the degree. Students should refer these websites and work with individual academic coordinators to best prepare themselves to matriculate into and throughout their program of interest.
2. **Progression:** Each academic program within the SMHS maintains minimal Technical Standards and Capacity (See table below), and minimal academic standards as judged by faculty members, examinations, and other measurement of performance required for a student to continue to progress towards a degree. Every effort is made to meet the academic needs of the UND SMHS student. It is the student's responsibility to identify and disclose any disabilities if requesting any needed accommodations to progress through a program. When a student's ability to perform a technical or academic standard is not met, the student must demonstrate alternative means and/or abilities to perform the specified activity to continue to matriculate and progress towards earning a degree.
3. **Graduation:** Prior to the award of the degree, health professions and biomedical, and clinical and translational science students must demonstrate the requisite capacities/abilities in the following broad areas: observation, communication, motor function, intellectual, conceptual, integrative and quantitative abilities, behavioral and social abilities, and ethics and professionalism. The broad requirements for each program are described below (Table: Technical Standards and Capacity). Further, a student must be able to engage in personal reflection and self-awareness as a mechanism of effective personal growth, development, and lifelong learning. Each clinical, fieldwork, or practicum site may have additional technical standards that might affect a student's ability to complete clinical placements.

Technical Standards

Standard	Health Professions Students	Biomedical Sciences and Clinical and Translational Science Students
Observation	Students should be able to obtain information from demonstrations and experiments in the basic sciences. These skills require the use of vision, hearing, and touch or the functional equivalent. Students in the health professions programs should be able to assess a patient accurately.	Students should be able to obtain information from demonstrations and experiments in the basic sciences. These skills require the use of vision, hearing, and touch or the functional equivalent.
Communication	Students should be able to communicate with others, including patients, in order to elicit information, detect changes in mood, activity, and to establish a therapeutic relationship. Students should be able to communicate via English effectively and sensitively with others, including patients and all members of the healthcare team, both in person and in writing.	Students should be able to communicate with others in order to elicit information, detect changes in mood, activity, and to establish a collegial relationship. Students should be able to communicate in English effectively and sensitively with others, including all members of the scientific community, both in person and in writing.
Motor Function	Students should, after a reasonable period of time, possess the capacity to perform a physical examination and perform diagnostic maneuvers. Students should be able to execute some motor movements required to provide general care to patients and provide or direct the provision of emergency treatment of patients. Such actions require some coordination of both gross and fine muscular movements balance and equilibrium.	Students should, after a reasonable period of time, possess the capacity to perform physical tasks required for experimental procedures in the laboratory setting. Such tasks may require coordination of both gross and fine muscular movements balance and equilibrium. Students should be able to provide or direct the provision of emergency response to unforeseen laboratory incidents.

<p>Intellectual, Conceptual, Integrative and Quantitative Abilities</p>	<p>Students should be able to assimilate detailed and complex information presented in both didactic and clinical coursework, adapt to different learning environments and modalities, and engage in problem solving. Students are expected to possess the ability to accurately measure, calculate, reason, analyze, synthesize, and transmit information.</p>	<p>Students should be able to assimilate detailed and complex information presented in both didactic and clinical coursework, adapt to different learning environments and modalities, and engage in problem solving. Students are expected to possess the ability to accurately measure, calculate, reason, analyze, synthesize, and transmit information.</p>
<p>Behavioral and Social Abilities</p>	<p>Students should possess the emotional health required for full utilization of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities, and the development of mature, sensitive, and effective relationships with patients, fellow students, faculty, and staff. Students should be able to tolerate physically taxing workloads and to function effectively under stress. They should be adaptable and resilient to changing environments. Compassion, integrity, concern for others, interpersonal skills, professionalism, interest, and motivation are all personal qualities that are expected during the education process.</p>	<p>Students should possess the emotional health required for full utilization of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities, and the development of mature, sensitive, and effective relationships with fellow students, faculty, and staff. Students should be able to tolerate physically taxing workloads and to function effectively under stress. They should be adaptable and resilient to changing environments. Compassion, integrity, concern for others, interpersonal skills, professionalism, interest, and motivation are all personal qualities that are expected during the education process.</p>
<p>Ethics and professionalism</p>	<p>Students should demonstrate ethical and moral behaviors commensurate with the role of a healthcare professional and researcher in all interactions with faculty, staff, students, the public, and patients. The student is expected to understand the legal and ethical aspects of their profession and function</p>	<p>Students should demonstrate ethical and moral behaviors commensurate with the role of a scientist in all interactions with faculty, staff, students, the public, and subjects. The student is expected to understand the legal and ethical aspects of their profession and function within the law and ethical</p>

	within the law and ethical standards required of the profession.	standards required of the profession.
Students must adhere to the policies of the State Board of Higher Education, the University, the School of Medicine and Health Sciences, the program/department, and the clinical/practicum/fieldwork sites. This includes matters ranging from professional dress and behavior to following the program's academic schedule which may differ from the University's academic calendar and be subject to change at any time.		

RESPONSIBILITIES

Student	It is the responsibility of the student to request necessary accommodations through university procedures.
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Disability Services for Students at UND assists qualifying students who have a physical or mental impairment that substantially limits one or more major life activities, such as learning, seeing, hearing, speaking, walking or breathing. Presence of disability alone does not necessarily qualify an individual for accommodations. The individual must experience functional limitation(s) caused by the disability that significantly limit or prevent access to the University's programs, services or facilities.

Determination for accommodations is made on a case-by-case basis and is accomplished through discussion with the student and review of the disability documentation. Note that if accommodations are identified, they cannot be provided retroactively. For more information on the process to determine eligibility or to discuss accommodations, applicants or enrolled students in the biomedical sciences, clinical and translational sciences, or health professions programs should contact Disability Services for Students. Disability Services for Students is the campus resource for confidential discussion and support regarding reasonable accommodations:

Disability Services for Students (DSS)
 McCannel Hall Room 190
 2891 2nd Ave N. Stop 9040
 Grand Forks, ND 58202 – 9040 P
 701.777.2664
 F 701.777.4583
UND.dss@UND.edu



STUDENT SIGNATURE PAGE

The UND MLS Undergraduate Handbook contains policies, procedures and processes that MLS students must comply with in order to be successful academically and professionally. It is the responsibility of the UND MLS program to ensure that students are aware of these policies, procedures and processes, which is accomplished through completion of this signature page. Note that students in the MLS Cohort Program route will complete a separate signature page that contains additional route-specific acknowledgement items.

Initial each item as acknowledgement:

Initials	Signature Page Item
	1. I have read, understand, and agree to comply with the policies, procedures and processes as defined in the UND MLS Undergraduate Handbook. I understand that the policies, procedures and processes in the handbook are subject to modification and that I am responsible for updates as they occur.
	2. I have read and understand that I must be able to meet the UND MLS Essential Functions (pg. 4) and SMHS Technical and Academic Standards for Matriculation, Progression, and Graduation (Appendix 3) in order to be successful in the academic and clinical laboratory. I understand that if I am unable to meet any of these essential functions or standards, I must inform UND MLS faculty/staff to determine if accommodation options are available that would allow for continuation in the program.
	3. I am aware of the UND SMHS Health Conditions Impacting Student Participation policy, and understand that if I have a condition (injury, illness, infection, environmental disease) that may negatively impact myself, fellow students, staff, faculty or patients, I have a professional obligation to inform and work with UND MLS faculty/staff immediately.
	4. I give permission to the UND Department of MLS to release information from my student files for purposes of job or educational opportunities and/or advancement.
	5. I have read the MLS safety and biohazard standards and have been informed about the blood borne pathogens exposure control plan regulations and policies. I understand that I am responsible for compliance with these policies and standards.
	6. I understand that photos and/or videos taken during MLS program coursework and activities may be utilized for educational and/or promotional purposes, and give consent for my image to be utilized in them. If I do not want my image to be utilized in such photos and/or videos, I must communicate that request in writing to the UND MLS Laboratory Manager or program route coordinator.
	7. I understand that in order to learn phlebotomy skills, students and instructors in the MLS program may be performing venipunctures and fingersticks on each other. I give permission for these phlebotomy procedures to occur.
	8. I understand that my criminal background check information and my immunization records may need to be shared with my clinical affiliate.

Clearly Print Your Full Name

Clearly Print Your 3 Initials

Signature

Date