# Information for MLS Applicants

## Admission Guidelines:

Students seeking admission to the Biomedical Laboratory Diagnostic Program’s Medical Laboratory Science (MLS) Bachelor of Science degree must make a formal application to the major. The applicant must meet the minimum criteria set forth for the desired major. For specific details, please refer to the Academic Programs catalog.

The Biomedical Laboratory Diagnostics Program conducts a review of applicants with a minimum grade point average (GPA) of 2.5 for the MLS major. In addition, MLS has progression standards for key courses in the curriculum after admission.

Multiple selection criteria are used in the selection process including grade-point average (including # of repeat credits and withdrawal), community service, work experience, candidate interview and candidate compositions. The selection of candidates is competitive, and enrollment is limited based on the number of clinical spaces available.

## Admission Process:

Students should complete the MLS application and email them to John Gerlach ([gerlach@msu.edu](mailto:gerlach@msu.edu,%20raffer24@msu.edu?subject=MLS%202023-2024%20Application%20Submission)) by **December 31st**. The application process is competitive; therefore, applicants could be placed on an alternate list until the end of fall semester when applications are finalized.

Before applying, the student must meet the criteria set forth by the Biomedical Laboratory Science Program outlined in the Admission Guidelines. Students that have not completed all of the required courses for application may apply; however, their application will be held for final consideration until those grades available.

Students should meet with the MLS Assistant Program Director to review application criteria, receive the application, and go through a copy of “Essential Requirements for the Medical Laboratory Science Major.” The student must complete and submit the application. Once it is determined that the student has met the minimum application requirements, the student will be contacted to complete the composition component and faculty interviews. An outline of the application process is provided below for your convenience.

## Essential Requirements:

Upon applying for the MLS major, you will receive a copy of “Essential Requirements for the Medical Laboratory Science Major.” The abilities listed in this document are essential to your success in the academic program. If you are accepted into the major, you will be asked to sign a document indicating you believe you have the required abilities, or to request accommodation to assist you in meeting them. If you are concerned about your ability to meet these requirements, contact the MLS Assistant Program Director.

## The Clinical Experience:

MLS students must complete a clinical laboratory experience in an affiliated hospital or laboratory, in addition to their on-campus curriculum. This experience typically lasts six months and consists of forty-hour workweeks. The clinical experience for MLS students is 14 credits in addition to the 120 credits of on campus curriculum. Student preferences are considered when determining the location of the MLS laboratory experience; however, the Biomedical Laboratory Diagnostics Program is not always able to accommodate the student’s preferred site. Hence, MLS students must be willing to accept placement with other affiliates and students must be willing to relocate. These affiliates currently include: ProMedica Lab, Toledo, OH; in Michigan: Beaumont Hospital Troy, Troy; Bronson Methodist Hospital, Kalamazoo; Covenant HealthCare Lab, Saginaw; Henry Ford Health - Detroit, Henry Ford Allegiance Health, Jackson; Hurley Medical Center, Flint, MI; Spectrum HealthCare Lakeland Core Laboratory, St. Joseph; Trinity Health Saint Mary’s – Grand Rapids, Grand Rapids; Mercy Health Laboratory, Muskegon; Univ of Michigan Health West, Grand Rapids; Trinity Health, Ann Arbor, Livonia, Oakland, Chelsea, and Livingston; Sparrow Hospital, Lansing; and Michigan Medicine Laboratories, Ann Arbor.

Although it has never happened in the history of the MLS program, it is possible that no clinical site rotation would be available at the time a student is scheduled to enter clinic. This may be due to situations such as unanticipated staffing shortages, budget cuts, or facility remodeling. The Program administrators will work to prevent this. However, should it occur, the first option would be for students to be assigned to clinical rotations at the earliest possible later date. If this is unacceptable for the student, MLS students would be able to graduate in Biomedical Laboratory Science without additional courses.

## Certification Examination:

Graduates from MLS are eligible to take national certification examinations from several certifying agencies after the completion of the clinical rotation. It is advised that students take at least one of these examinations at a cost of approximately $240 for each exam. Specific details can be found at [ASCP](http://www.ascp.org/).

## Criminal Background Check:

It is the student’s responsibility to provide the Biomedical Laboratory Diagnostics Program or clinical site with the appropriate criminal background check information, if requested. Students must comply with The Joint Commission (TJC) standard HR.1.20. Students may be expected to cover the cost of the background check.

## Health Insurance:

Students are required to carry health insurance while they are in the clinical phase of the program. Michigan State University offers several options of coverage. Visit [MSU Student Health Insurance Plan](https://www.hr.msu.edu/benefits/students/health/index.html) for additional information regarding health care plans available to MSU students. Students will be expected to provide proof of insurance before beginning the clinic practicum.Immunization Requirements:

Michigan State University’s immunization policy for health professional students is consistent with guidelines from the Centers for Disease Control and Prevention. In addition, employers may require that certain immunizations are met before entering a clinical rotation. Students will be expected to document immunization compliance as specified in the clinical rotation manual before progressing to the clinical phase. Michigan State University will not approve students to progress to the clinical phase with incomplete immunization documentation.

## Urine Drug Tests:

Students will be asked to commit to a urine drug test prior to their clinical phase. Information on sites available and cost is included in the clinical manual. In addition, students must be willing to submit to random urine drug tests if required by clinical rotation sites.

## Disaster Preparedness:

In the event of a devastating natural disaster, act of terrorism or infectious disease epidemic, the University has developed a disaster preparedness plan to ensure the safety of both students and employees. This plan includes the possibility of shortening semesters to 12 weeks. In a professional program such as the MLS program, the loss of instructional time poses a special challenge because certifying agencies, licensing bodies, employers, and clients maintain expectations that prospective employees will possess a comprehensive background regardless of disruptions to instruction. Hence, students in the MLS program will still be expected to complete all the objectives of the curriculum. If it becomes necessary to limit a semester to a total of 12 weeks, the BLD program will work with students impacted by this decision to determine the most effective way for them to complete the remaining required course work. Decisions will be made with consideration of safety for students and faculty as the first consideration and with respect for policies and practices at the affiliated institutions.

Admission Process for Medical Laboratory Science

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| 1. Student meets application criteria for MLS or moves to step 2 to discuss with MLS Advisor  * Have an overall grade-point average of 2.5 or better including courses taken at other institutions. * Have a grade-point average of 2.5 or better in the following courses: BLD 204, BLD 213L, BLD 313, BLD 314L. * Have completed BMB 401, MMG 201 or MMG 301, BLD 324, BLD 434. |
| 1. Student meets with MLS Advisor  * Discuss admissions criteria * Plan courses to be eligible for application * Receive and review “Essential Requirements” |
| 1. Student submits completed application to John Gerlach ([gerlach@msu.edu](mailto:gerlach@msu.edu,%20raffer24@msu.edu?subject=MLS%202023-2024%20Application%20Submission)) by **December 31st.** |
| 1. Student writes composition   A composition must be completed and will be conducted via Zoom. Several dates and times will be announced for you to select your writing time. These are general questions that require no preparation. Professional writing is expected. This is usually done in the Spring semester following the application submission. |
| 1. Student completes faculty interviews   You will need to schedule interviews with two faculty members in the Spring semester following the application submission. Professional behavior and attire are expected. These interviews will be conducted via Zoom. |
| 1. Program reviews application, composition, and interview performance   Multiple selection criteria are used in the selection process including grade point average (including repeat credits and withdrawal), community service, work experience, your interview, and your compositions. Applicants may be placed on an alternate list until the end of the fall semester when applications are finalized. |
| 1. Program sends confirmation of Acceptance/Denial   An email of Acceptance/Denial will be sent to you via the confidential message system and your MSU email by the end of May. |
| 1. Accepted student returns acceptance and essential function forms by the end of May. |

**Biomedical Laboratory Diagnostics Program**

**E-mail application to John Gerlach –** [**gerlach@msu.edu**](mailto:gerlach@msu.edu,%20raffer24@msu.edu?subject=MLS%202023-2024%20Application%20Submission)

**Application for Admission to MLS Major**

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| Name: Last First Middle | | Former Name (If applicable): |
| PID: | | |
| Local Address City State Zip Code | | |
| Local Phone: | E-mail Address: | |
| Permanent Address City State Zip Code | | |

**Employment History:** Provide information regarding employment history including dates of employment, employer information, a brief position description, and hours per week. Please start with the most recent experience. Additional information may be attached if necessary.

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| Dates | Employer Information | Position Description |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Supervisor: |  |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Supervisor: |  |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Supervisor: |  |

**Education Record:** List all undergraduate colleges, universities, and specialized institutions attended after high school, including experience at Michigan State University. Use the GPA Calculation Worksheet provided to assist you with calculating GPA.

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| --- | --- | --- | --- | --- |
| Institution  (City, State, Country) | Dates of Attendance | Major | Overall GPA | Degree Awarded, if any |
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Has your education been continuous other than for summer breaks?

* Yes
* No - If no, please explain:

Have you been excluded from any educational institution, or denied readmission because of deficiencies in either conduct or academic achievement?

* Yes
* No

If yes, please explain:

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| Criminal Background Liability Statement:  Clinical sites may require a criminal background check, which may require fingerprinting and/or a drug screen. It is the student’s responsibility to provide this documentation to the clinical site, as well as assume the cost.  I have read and understand that I may be held responsible for the cost necessary to undergo a criminal background check based on individual clinical site policies.  **Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

**Clinical and Volunteer Experience:** Provide information regarding significant volunteer experiences in both health care and non-health care settings. State the dates of involvement, organization information responsibilities, and number of hours per week. Please start with the most recent experience. Additional information may be attached if necessary.

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| Dates | Organization information | Responsibilities |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Contact person: |  |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Contact person: |  |
| \_\_\_\_\_/\_\_\_\_to\_\_\_\_\_/\_\_\_\_\_  (Month/Year)  Hours per week: | Name:  Address:  Contact person: |  |

**Extracurricular Activities/Awards:** Provide information regarding extracurricular activities (excluding activities listed above) or awards received, including relevant dates and a brief description. Please start with the most recent experience. Additional information may be attached if necessary.

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| Date | Activity/award description |
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**Professional knowledge:** Describe your understanding of the medical laboratory professional in today’s healthcare environment, and the personal strengths and interests that motivated you to select this profession. Please limit your response to the space provided.

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**Special considerations:** Use the space below to describe additional information that you would like the admissions committee to consider.

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| I certify that the information given in this application is complete and accurate. I also realize that providing false information, or withholding information requested on this application will make me ineligible for admission or subject to immediate dismissal from my selected program. My signature confirms that I have read and agree to the terms herein. (When you email this form – use your MSU email, and we will use that as your electronic signature).  Signature Date  (MM/DD/YYYY) |

**GPA Calculation Worksheet Instructions**

Calculate your grade point average (GPA) for both your **science** and **non-science** courses at each **institution** attended using the separate worksheets provided. If transcript grades from other institutions are not based on a **4.0 grading scale**, then these grades must be converted to a 4.0 grading scale described in Table 1 below. If courses were taken on a quarter or term basis, grades must be converted to **semester equivalents**. If you have **withdrawn (W)** from a course or received an **incomplete (I)** grade for a course, you do not add these courses to your grade point calculation, however you must write the information on the worksheet. If you have **repeated** **(R)** a course, you must include the original course grade and the repeated grade in the grade point calculation.\* Please submit the GPA calculation worksheet with your application. An explanation of all terms in bold can be found in Table 2.

**GPA calculations:**

1. List all science/non-science courses in chronological order on the table provided. Be sure to include the **institution** where the course was taken, the **academic year** in which the course was taken, the **semester or term** in which the course was taken, the **course number**, the **course title**, the **grade** that appears on your transcript (grade points), and the number of **credit hours** for the course.
2. Convert all letter grades to grade points and or quarter grades to semester grade equivalents.†
3. Multiply the grade points by the number of credit hours (credit weight) for the course to calculate the total grade for the course. Place this number in the “Total Credits” column.
4. Add all the values in the Credit Hours Attempted column.
5. Add all the values in the Total Credits column.
6. Divide the total number of credits by the total number of credit hours attempted.

Table 1: Conversion from a letter grading scale to a 4.0 grading scale

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| **4.0 Scale** | 4.0 | 3.7 | 3.5 | 3.3 | 3.0 | 2.7 | 2.5 | 2.3 | 2.0 | 1.7 | 1.5 | 1.3 | 1.0 | 0.7 | 0.5 | 0.0 |
| **Letter**  **Scale** | A | A- | AB | B+ | B | B- | BC | C+ | C | C- | CD | D+ | D | D- | E | E,F |

**Special Considerations:**

\*Repeated courses and GPA calculation:

1. Subtract the number of hours you are repeating from the total number of credit hours attempted.
2. Subtract the grade points from the courses you are repeating from the total number of grade points earned.
3. Divide the new total of credit hours attempted by the total number of grade points earned for your corrected GPA calculation

†Conversion of quarter grades into semester grades:

1. Multiply the total number of credit hours by 0.667.
2. Multiply the total number of grade points by 0.667.
3. Continue with step 3 of the GPA calculation directions.

Table 2: Information required by column for GPA worksheets

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| **Column** | **Information Required** |
| **Institution** | Name of the institution where the course was attempted. Please skip a line between different institutions. |
| **Academic Year** | Begins in the Fall and ends after the Summer. Can be expressed in the Semester system (Fall, Spring, Summer), the Trimester System (Fall, Winter, Spring, Summer), or the Quarter System (Fall, Winter, Spring, Summer) |
| **Semester/**  **Term/Quarter** | Please use the following abbreviations when filling out the Semester/Term column:  Semester (FS, SS, US)  Trimester (T1, T2, T3, T4)  Quarter (Q1, Q2, Q3, Q4) |
| **Course Number** | The exact course number as it appears on your transcripts. |
| **Course Title** | The exact course title as it appears on your transcripts. Indicate lab course work exactly as it appears on your transcript. Courses taken for honors credit can be designated by an “H” after the course title. This can be omitted for courses taken at Michigan State University. |
| **Science Courses** | Courses in the basic and applied sciences including biology, chemistry, physics, physiology, anatomy, pharmacology, etc. Please include math coursework in the science GPA. |
| **Non-science Courses** | Courses in arts and humanities, or social sciences, including psychology, English, music literature, art history, and economics, etc. |
| **Grade** | The grade assigned upon completion of a course. Be sure to convert to MSU point system as in the directions above. |
| **Credit Hours Attempted** | The number of hours assigned to a course. Be sure to convert to semesters as described above. |
| **Grade Points** | The grade points earned for a course. This number is calculated by multiplying your grade by the number of credit hours attempted for the course. |

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| **Institution** | **Academic Year** | **Semester/**  **Term** | **Course Name** | **Course Number** | **Grade** | **Credit Hours Attempted** | **Grade Points** |
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**Science GPA Calculation Worksheet (Attach additional sheets if needed)**

**(A) Total Science Grade Points \_\_\_\_\_\_\_\_\_ (B) Total Science Credit Hours \_\_\_\_\_\_\_\_\_\_ Science grade point average = A/B\_\_\_\_\_\_\_\_\_\_\_**

**Non-Science GPA Calculation Worksheet** **(Attach additional sheets if needed)**

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| **Institution** | **Academic Year** | **Semester/Term** | **Course Name** | **Course Number** | **Grade** | | **Credit Hours Attempted** | **Grade Points** |
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**(A) Total Non-Sci Grade Points \_\_\_\_\_\_\_\_\_ (B) Total Non-Sci Credit Hours \_\_\_\_\_\_\_\_ Non-Sci Grade Point Average = A/B\_\_\_\_\_\_\_\_\_\_\_**

**For Department Use ONLY:**

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| --- | --- | --- | --- | --- | --- | --- |
| Science GPA: | Non-Science GPA: | Number of Semesters: | Number of Courses Repeated: | Number of Semesters with Incomplete Grades: | Number of Semesters with Withdrawals: | Grade in BLD 213L: |
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**Essential Requirements for the Medical Laboratory Science**

**Biomedical Laboratory Diagnostics Program**

**Michigan State University**

**Essential Observational Requirements**

**The student must be able to:**

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

**Essential Movement Requirements**

**The student must be able to:**

* Move freely and safely about a laboratory.
* Reach laboratory bench tops and shelves, patients lying in hospital beds or patients seated in specimen collection furniture.
* Travel to clinical laboratory sites for practical experience.
* Perform moderately taxing continuous physical work, often requiring prolonged sitting, over several hours.
* Manipulate phlebotomy and culture acquisition equipment to safely collect valid laboratory specimens from patients.
* Manipulate laboratory equipment (i.e., pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures.
* Use an electronic keyboard (i.e., 101-key IBM computer keyboard) to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.

**Essential Communication Requirements Continued**

**The student must be able to:**

* Read and comprehend technical and professional materials (i.e., textbooks, magazine and journal articles, handbooks, and instruction manuals).
* Follow verbal and written instructions in order to perform laboratory test procedures correctly and independently.
* Clearly instruct patients regarding specimen collection technique.
* Effectively, confidentially, and sensitively converse with patients regarding laboratory tests.
* Communicate with faculty members, fellow students, staff, and other health care professionals verbally and in a recorded format (writing, typing, graphics, or telecommunication).
* Communicate effectively with all people, including those whose culture, spiritual beliefs, race, ethnicity, socioeconomic status, gender, gender-identity, sexual orientation, and/or age are different from their own.
* Independently prepare papers, prepare laboratory reports, and take paper, computer, and laboratory practical examinations.

**Essential Intellectual Requirements**

**The student must:**

* Possess these intellectual skills: comprehension, measurement, mathematical calculation, reasoning, integration, analysis, comparison, self-expression, and criticism.
* Be able to exercise sufficient judgment to recognize and correct performance deficiencies.

**Essential Behavioral Requirements**

**The student must:**

* Be able to manage the use of time and be able to systematize actions in order to complete professional and technical tasks within realistic constraints.
* Possess the emotional health necessary to effectively employ intellect and exercise appropriate judgment to insure a safe work environment.
* Be able to provide professional and technical services while experiencing the stresses of task-related uncertainty (i.e., ambiguous test ordering, ambivalent test interpretation), emergent demands (i.e., “Stat” test orders), and a distracting environment (i.e., high noise levels, crowding, complex visual stimuli).
* Be flexible and creative and adapt to professional and technical change.
* Recognize potentially hazardous materials, equipment, and situations and proceed safely in order to minimize risk of injury to patients, self, and nearby individuals.
* Adapt to working with hazardous and unpleasant biologicals.
* Support and promote the activities of fellow students and of health care professionals. Promotion of peers helps furnish a team approach to learning, task completion, problem solving, and patient care.
* Be honest, compassionate, ethical, and responsible. The student must be forthright about errors or uncertainty. The student must be able to critically evaluate her or his own performance, accept constructive criticism, and look for ways to improve (i.e., participate in enriched educational activities). The student must be able to evaluate the performance of fellow students and tactfully offer constructive comments.

Adapted from: Fritsma, G.A., Fiorella, B.J., and Murphy, M. Essential Requirements for Clinical Laboratory Science. Clin. Lab. Sci. 1996; 9: 40 - 43.

Revised September 2018, Implemented Aug 2007