



## Medical Laboratory Science Program

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### **Program Summary**

Marshfield Clinic Health System – Marshfield Labs provides the final year of training for students seeking a baccalaureate degree in Medical Laboratory Science (also known as Clinical Laboratory Science or Medical Technology). Marshfield Labs is affiliated with:

- [University of Wisconsin – La Crosse](#)
- [University of Wisconsin – Oshkosh](#)
- [University of Wisconsin - Stevens Point](#)
- [Michigan Technological University, Houghton, MI](#)

Students enroll in the Medical Laboratory Science program at one of the affiliated universities and complete their classroom studies on campus. Students then spend the equivalent of their senior year (9 months) at Marshfield Labs (or other laboratory affiliated with their university) in a practicum program. The practicum is designed to expose students to the everyday workings of a laboratory and teach them the knowledge and skills necessary to work as Medical Laboratory Scientists. On completion of the practicum, students receive a Bachelor of Science Degree in Medical Laboratory Science from their university. They are then eligible to take a national Board of Certification exam to become certified as a Medical Laboratory Scientist.

The Medical Laboratory Science program at Marshfield Labs was established in 1947 and is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Information regarding program accreditation status may be obtained from NAACLS at 5600 N. River Rd., Suite 720, Rosemont, Illinois, 60018-5119, Ph. 773-714-8880, or at [www.naacls.org](http://www.naacls.org).

### **Program Mission**

The mission of the Marshfield Labs Medical Laboratory Science Program is to provide a quality educational experience for students completing a practicum in Medical Laboratory Science. In keeping with the mission of Marshfield Labs, the program will provide didactic and practical training that will promote high standards of patient care and medical practice.

### **Program Goals and Competencies**

The goal of the program is to produce an entry-level laboratory professional that can perform in-vitro analysis of biologic specimens according to the procedures established for routine and specialized areas of the laboratory. The graduate will be able to participate in the supportive functions of quality control, instrument operation, troubleshooting, teaching,

and problem resolution. The graduate will exhibit qualities of leadership and professionalism.

Specifically, graduates will be expected to:

1. Analyze human and animal fluids
2. Operate/maintain instrumentation and methods
3. Maintain accurate and timely records
4. Provide clear, appropriate, and timely communications
5. Participate in educational instruction and professional development
6. Maintain attendance
7. Promote and contribute to safety
8. Adhere to the standards of compliance programs
9. Demonstrate an understanding of sound research design and practice
10. Participate in the management of human, financial, and material resources
11. Practice their profession in a professional and ethical manner

### **Admission Policy**

#### **Academic Requirements**

Applicants must meet all of the following requirements in order to qualify for admission to the program.

1. A minimum cumulative grade point average (GPA) of 2.75 on a 4.0 scale.
2. A minimum of 90 semester hours (or equivalent) to include the following prerequisites:
  - a. Biology: A minimum of 16 semester (24 quarter) hours to include
    - General Biology
    - Microbiology with lab experience
    - Immunology
    - Parasitology with lab experience
    - Genetics, Anatomy and Physiology, and Molecular Biology are strongly recommended.
  - b. Chemistry: A minimum of 16 semester (24 quarter) hours to include
    - General Chemistry
    - Organic Chemistry
    - Biochemistry
    - Quantitative analysis is strongly recommended and some laboratory experience must be included.
  - c. Mathematics:  
A minimum of one college level course. Statistics is strongly recommended.

d. Medical Laboratory Science:

- Hematology with lab experience
- Immunohematology with lab experience
- Urinalysis with lab experience
- Medical Terminology and Instrumentation are strongly recommended.

The courses acceptable toward meeting the above requirements would be any courses applicable toward a major in the above fields or in medical laboratory science. Survey courses do not qualify as fulfillment of the biology or chemistry prerequisites. Remedial math courses will not satisfy the mathematics requirements.

3. Applicants must possess, or be eligible for, a baccalaureate degree from their college or university upon satisfactory completion of the clinical practicum.

4. Pre-tests will be administered covering the prerequisite courses during the first week of clinical orientation. A minimum score of 60% on each test is required. Students failing to achieve the minimum score will be required to complete remedial work and will continue at the program's discretion.

5. Applicants who wish to count college credit from a foreign university, who have completed the academic requirements prior to seven years ago, or who wish to seek advanced placement for prior education or experience, should contact the Program Director concerning additional requirements.

### **Essential Non-academic Requirements**

Applicants must demonstrate sufficient physical and emotional health to successfully participate in the program and become employable.

A specific list of essential functions is found on the fourth page of the [Application Form](#). Applicants with special needs should inform the Program Director.

Students admitted to the program will be required to complete a Health Information Report documenting their current immunization status prior to beginning the practicum. A caregiver background check will be conducted by the student's university or the program.

### **Application Process**

[Instructions for Application to the Student Program](#) and [Application](#) and [Reference Forms](#) (PDF format) are available electronically on this web site.

The following documents should be received in the Laboratory Education office before October 1 to be considered for entry into the class beginning the following August:

1. A completed application form.
2. Official transcripts from all colleges and universities attended.
3. Three letters of reference.

Completed applications are reviewed by the program director. Personal interviews are scheduled with qualified candidates.

### **Student Selection**

All applicants who meet the requirements for admission and have completed the application process will be considered for admission to the program. A score sheet is completed for each applicant to facilitate the selection process. Applicants are ranked based on their

application materials, academic performance, letters of reference, and personal interview. Applicants from affiliated institutions will be given selection preference over equally qualified candidates from other institutions. Student acceptance notices will be given to the Medical Laboratory Science advisor on each campus by November 1.

Admission to the Marshfield Labs Medical Laboratory Science Program is competitive with a limited number of student positions available annually. Attendance at an affiliated institution does not guarantee placement in the program.

Admission shall not be denied to any person because of race, color, creed, religion, sex, national origin, disability, ancestry, age, sexual orientation, pregnancy, marital status or parental status.

In the unlikely event of program closure, either at the laboratory or the university, any student formally notified of acceptance into the program is assured of being able to complete clinical training the following year.

## **Curriculum**

### **Practicum Year**

The practicum year for Medical Laboratory Science (MLS) students is nine (9) consecutive months and begins in late August. During the first week of the practicum, students are scheduled to attend orientation sessions that are designed to familiarize the student with the policies and procedures of Marshfield Labs and Marshfield Clinic Health System.

Students then spend ten weeks in Student Lab. All students proceed through the Student Lab rotations as a single group. The Marshfield Labs program is one of the few programs in the region to have a Student Lab. Physically, the Student Lab is an area separate from but adjacent to the Main Lab clinical testing area. Conceptually, Student Lab is a time when lectures are presented and basic lab skills reviewed to bring all students to the same level before their Main Lab rotations.

Students are scheduled in Main Lab rotations November to May. Students may be scheduled in Main Lab rotations alone or with one other student. During the same period, students also attend lectures as a group on Monday mornings.

### **Clinical Courses**

Each section rotation is considered the equivalent of a 400 level university course. Rotations may include a student lab, main lab, and/or didactic (Monday lecture series) component. All rotations address the theory, principles, methodologies, and clinical correlations specific to the area. Application of knowledge and skills is emphasized. Performance of manual and automated procedures is required. After demonstrating proficiency, students may be permitted to perform procedures under qualified supervision. By the conclusion of the rotation, students are expected to have acquired the knowledge and skills necessary to function as entry-level MLS professionals.

#### **• Clinical Chemistry**

Suggested Semester Credit Equivalent: 4

Includes a student lab (two week), main lab (three week), and didactic component.

Includes general chemistry, special chemistry, and 24-Hr Services (stat lab) areas.

- Clinical Hematology (and Hemostasis)  
Suggested Semester Credit Equivalent: 6  
Includes a student lab (two week), main lab (six week), and didactic component.  
Includes general hematology, special hematology, coagulation, and special coagulation areas.
- Clinical Immunohematology (Blood Bank)  
Suggested Semester Credit Equivalent: 4  
Includes a student lab (two week) and main lab (three and a half week) component.
- Clinical Immunodiagnostics  
Suggested Semester Credit Equivalent: 2  
Includes a student lab (three day) and main lab (one week) component.  
Includes immunology and serology.
- Clinical Microbiology  
Suggested Semester Credit Equivalent: 6  
Includes a student lab (two and a half week) and main lab (six week) component.  
Includes bacteriology, mycology, parasitology, and specimen processing and microscopy specific to the area.
- Phlebotomy and Urinalysis  
Suggested Semester Credit Equivalent: 2  
Phlebotomy rotation includes a student lab (three day) and main lab (one and a half week) component. Urinalysis rotation includes a main lab (one week) component.
- Special Clinical Rotations: Molecular Biology and Regional Center Rotation  
Suggested Semester Credit Equivalent: 2  
Molecular Biology rotation includes a student lab (one week) and main lab (one week) component. Includes molecular biology and molecular diagnostics.  
Regional Center rotation includes a laboratory (one week) component. Includes observation and performance of sample collection, sample processing, laboratory testing, and QC in a generalist environment.
- Management and Laboratory Operations Seminar  
Suggested Semester Credit Equivalent: 1  
Comprised of a specially scheduled block of presentations.  
Includes topics relating to the management and administration of a clinical laboratory.

Course titles may appear slightly different on official university transcripts. Credit values vary according to the affiliate university.

Faculty of the program include the Program Director, pathologists, PhD's, laboratory managers, practicing certified medical laboratory scientists, and other laboratory professionals.

### **General Information**

#### **Program Format**

The clinical practicum is nine (9) consecutive months, beginning in late August. There is one week of orientation sessions, followed by ten weeks of Student Lab rotations. Students

are scheduled for Main Lab rotations November to May.

Students are to be in attendance Monday through Friday. The student day is eight hours long, typically beginning at 0800 and ending at 1630. Beginning and ending times are determined by each section and may vary. Occasionally, hours may be altered slightly, e.g. 0700-1530, to give the student maximum experience in a section. Schedules are provided to students in advance. Attendance at all lectures is required.

### **Tuition and Fees**

Students enrolled at a university during their practicum year pay tuition directly to the university. The university then reimburses a part of the tuition to Marshfield Labs. Students not enrolled at a university during their practicum year pay a fee directly to Marshfield Labs, due by November 1 of the practicum year. The fee for the current practicum year is \$5750. This fee is reviewed annually and is subject to change.

The cost of required textbooks ranges from \$400-\$550 and is the responsibility of the student.

The cost of national certification examinations is the responsibility of the student.

The cost of all housing, meals, and travel during the practicum year, including all costs associated with rotation(s) at regional centers, is the responsibility of the student.

In the event of withdrawal, students enrolled at a university will be subject to the refund and withdrawal policies of their university. Students not enrolled at a university during the practicum will receive a 50% refund of their tuition if notice of withdrawal is received by the Program Director in writing before November 1. After November 1, no refund is given.

Students who need financial assistance are encouraged to visit their university's Office of Financial Aid and apply for scholarships, grants, and/or student loans.

### **Student Policies**

During orientation, students will receive a program [Policy and Procedure Guide](#) detailing general program policies on conduct, attendance, grading and evaluation procedures, and grievance policies. They will also receive information on the safety, security, and confidentiality policies of Marshfield Labs and Marshfield Clinic Health System. Students will be expected to adhere to these policies during the practicum.

### **Insurance**

Students are required to carry professional liability insurance through their university or purchase a personal policy. A student needing a personal policy should notify the Program Director. Arrangements can be made for the student to purchase the appropriate insurance at minimal cost.

Students are responsible for their own medical care needs and their own health care costs. They are fully responsible for all costs related to general medical or emergency care including, but not limited to, immunizations, tests, procedures, office visits, and hospitalizations. Students may use the services of the Urgent Care Department, Emergency Department, or may seek care from a provider of their choice at their own expense. Marshfield Clinic Health System does not provide health insurance for students.

**Housing**

Students are responsible for obtaining their own housing and are responsible for their own housing costs. Marshfield Clinic Health System does not provide housing for medical laboratory science students. Information on area housing is available online or through the Program Director.

**Meals**

Meals may be purchased in one of the Marshfield campus cafeterias. Lunches carried in must be eaten in the cafeterias or break rooms. Food and beverages are not allowed in the laboratories.

**Dress Code**

Students are required to follow a dress code appropriate to the professional work involved and within the guidelines required for employees. Clothing should be clean, free from holes and tears, and not wrinkled or tattered. Scrubs or dress slacks and neat, clean blouses/shirts or turtlenecks are acceptable attire. Stockings must be worn; legs must be covered below pant/skirt hemlines. Open-backed shoes are acceptable, but open-toed shoes are not allowed. Tennis shoes are acceptable.

Laboratory coats and nametags are provided by Marshfield Labs.

**Holidays / Vacations**

Classes are not scheduled on national holidays, the day after Thanksgiving, and days between Christmas and New Year's Day. Some days in February, March, or April may be scheduled as a spring vacation. These dates may vary from year to year.

**Absences**

Students who will be unavoidably late or absent for any reason must notify their assigned section and the program director as soon as possible. All work missed due to tardiness or absence must be made up by the student. Two consecutive unexcused absences are considered grounds for dismissal. Excessive absences may require the student to spend additional time in a section at the end of the practicum year.

**Part-Time Employment**

Students are strongly encouraged not to be employed (work in a paid position) outside the laboratory during the practicum year. If a job is held, it is advised that the position be part-time, within the laboratory or Marshfield Clinic Health System, and that the student be scheduled for a limited number of hours. Practicum hours will not be shortened or altered to accommodate a student's work schedule.

**Internet Access**

Marshfield Clinic Health System Information Systems Department conducts a brief training session for students. A login will be provided for Internet and Marshfield Clinic Health System e-mail access. PCs are available in the Marshfield Medical Library and in other locations throughout the facility. Students are encouraged to bring their own laptops. Wireless access is available in limited areas; network connections are not provided.

**Termination**

The clinical course of study may be terminated prior to graduation for any one of the following reasons:

- Failure to maintain a grade level of 70% in classroom or practical instruction.

- Failure to comply with program, Marshfield Labs, or Marshfield Clinic Health System policies.
- Documented evidence of academic misconduct.
- A single breach of confidentiality.
- Conduct or attitude that is deemed objectionable or detrimental, or threatens the health, safety or welfare of any patients, invitees, or employees at the facility.
- Voluntary withdrawal.

### **Graduation**

The program awards a certificate of completion to students completing the program. The awarding of the certificate is not contingent upon passing any external licensure or certification examination. Students enrolled at a university during the practicum receive a baccalaureate degree from their university.

### **Outcome Measures**

The program was established in 1947. Outcome measures for the last five classes include:

- A graduation rate of 100%.  
Every student who started the final half of the practicum, graduated.
- A certification exam pass rate of 100%.  
Every student who took the certification exam, passed.  
The program's mean score exceeded the national average in each of the five years.
- A placement rate of over 85%.  
Over 85% of graduates found positions as medical laboratory scientists. Others continued their studies in graduate school or chose to pursue other career paths.