

# MLS Clinical Practicum Manual



Michigan Technological University

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## Affiliated Hospitals & Clinical Liaisons

- 1. Aspirus Keweenaw Hospital**  
205 Osceola St.  
Laurium, MI 49913  
(906) 337-6550  
Lab Manager: Melissa Loukus,  
melissa.loukus@aspirus.org
- 2. Aspirus Iron River Hospital**  
1400 W Ice Lake Rd.  
Iron River, MI 49935  
(906) 265-6121  
Lab Director: Kerri Weeeks, MT (ASCP)  
Kerri.weeeks@aspirus.org
- 3. Aspirus Ironwood Hospital**  
10561 Grandview Ln.  
Ironwood, MI 49938  
(906) 932-6207  
Lab Manager: Dennis Aspinwall, MT(ASCP)  
Dennis.aspinwall@aspirus.org
- 4. Bronson Methodist Hospital**  
601 John St.  
Kalamazoo, MI 49007  
(269) 341-6440  
Lab Manager: Bridget Yager, Bronson  
Laboratory Education Manager  
Yagerb@bronsonhg.org
- 5. Dickinson County Healthcare System**  
1721 S. Stephenson Ave.  
Iron Mountain, MI 49801  
(906) 774-1313  
Lab Supervisor: Charles Burridge, MLS  
(ASCP) Charles.Burridge@dchs.org
- 6. HSHS Sacred Heart Hospital/St. Joseph's Hospital**  
900 West Clairemont Ave.  
Eau Claire, WI 54701  
(715) 717-4232  
Lab Manager: Russell Albert, CLS (ASCP)  
Russell.Albert@hshs.org  
Director of Clinical Education: Melissa  
Wagner, MLS(ASCP)  
Melissa.wagner@hshs.org
- 7. OSF St. Francis Hospital**  
3401 Ludington St.  
Esanaba, MI 49829  
(906) 786-5707 ext. 5317  
Lab Manager: Kim Mahoney, BS, MLS (ASCP)<sup>cm</sup>  
Kimberly.S.Mahoney@osfhealthcare.org
- 8. Oscar G. Johnson VA Medical Center**  
325 East H St.  
Iron Mountain, MI 49801  
(906) 774-3300 ext. 32337  
Lab Supervisor: Stephen Richey, MLS (ASCP)<sup>cm</sup>  
stephen.richey@va.gov  
Student Coordinator: Bridget Grosskopf  
Bridget.Grosskopf@va.gov
- 9. MidMichigan Health**  
4000 Wellness Dr.  
Midland, MI 48670  
(989) 839-1462  
Lab Director: Cindy Fillmore  
cindy.fillmore@midmichigan.org  
Education Coordinator: Maria Rockafellow  
Maria.rockafellow@midmichigan.org

**10. Michigan Medicine- University of Michigan**  
1500 East Medical Center  
Ann Arbor, MI 48109  
(734) 936-8387  
Laboratory Manager: Janette Todd  
toddjtk@med.umich.edu  
Internship Coordinator: Karen Barron  
karbarro@med.umich.edu

**11. Munson Medical Center**  
1105 6<sup>th</sup> Street  
Traverse City, MI 48684  
(231) 935-6641  
Clinical Lab Educator: Marian Barbera, MT  
(ASCP) mbarbera@mhc.net

**12. UP Health System- Marquette**  
420 W. Magnetic Ave.  
Marquette, MI 49855  
(906) 225-7489  
Lab Director: Polly Hockberger, MSCLS,  
MLS (ASCP)<sup>CM</sup> [polly.hockberger@mghs.org](mailto:polly.hockberger@mghs.org)  
Lab Manager: Caprice Feys  
Caprice.feys@mghs.org

**13. UP Health System- Portage**  
500 Campus Dr.  
Hancock, MI 49930  
(906) 483-1435  
Lab Director: Jen Heltunen, MT (ASCP)  
[jheltunen@portagehealth.org](mailto:jheltunen@portagehealth.org)

**14. UW Health**  
600 Highland Ave.  
Madison, WI 53792  
(608) 263-9006  
Laboratory Services Supervisor: Meredith  
Dill, MLS (ASCP)<sup>CM</sup>  
[MDill@uwhealth.org](mailto:MDill@uwhealth.org)

## Letter from the Director

*Congratulations on embarking upon the next phase of becoming a Medical Laboratory Scientist!*

You have recently completed the rigorous 4-year Medical Laboratory Science Program at Michigan Tech University. This alone is something to be proud of. You have learned the basics of clinical laboratory medicine - background information, the student labs, discussions, presentations, exams, and case studies. Now, the next step is putting all of the above into practice!

As you begin your clinical practicum, please keep in mind that you are still a student. The patient is the focus. The professionals you are working with have expertise in their field of study and it is your job to glean as much practical information as you possibly can. Ask a lot of questions! This is an invaluable experience so I encourage you to embrace it and make the absolute most of it.

At times this will be difficult as the demands are often great. You might even feel “in the way”. This is normal, and you will persevere! The Medical Lab Scientist community is a wonderful group of likeminded people. Their priority is always the patient and ensuring the laboratory reports are accurate and precise. Remember, 70% of all diagnostic information is from the clinical laboratory and the many scientists who deliver that information are extremely conscientious.

Make your program at Michigan Tech proud, make your practicum site proud, and go on to be a successful, board certified, Medical Laboratory Scientist! You have chosen a wonderful profession with so many opportunities. Your future is promising, and with you on board, the future of laboratory medicine will be in great hands.

With Respect,  
Claire Danielson  
MLS Program Director  
Michigan Tech University

# MTU MLS Program

## MLS Program Faculty & Staff

During the course of your practicum, your primary university contact will be the MLS Program Coordinator.

### **MLS Program Director:**

Claire Danielson, MS, MLS(ASCP)<sup>CM</sup>  
Dow 732  
cedaniel@mtu.edu  
Office: 906-487-2120  
Cell: 906-370-4498

### **MLS Program Coordinator:**

Sarah LewAllen, MS, MLS(ASCP)<sup>CM</sup>  
Dow 734  
selewall@mtu.edu  
Office: 906-487-2035  
Cell: 248-978-7302

### **Associate Teaching Professor, Biological Sciences/MLS:**

Brigitte Morin, MS  
Dow 736  
bemorin@mtu.edu  
Office: 906-487-3373

### **Program Director**

The program director is responsible for the day-to-day operations of the academic program. Duties include, but are not limited to, advising students throughout the MLS program, addressing curricular requirements in accordance with NAACLS, maintaining outcome data for the academic and clinical programs, monitoring budgetary matters, and managing continuous improvement of the MLS program.

### **Program Coordinator**

The program coordinator will be the primary university contact person for practicum students and will be responsible for organizing student practicums, maintaining NAACLS accreditation, teaching the online practicum course, monitoring student progress, and continuing ongoing communication with affiliates and practicum students.

## **Mission Statement**

We equip students with the knowledge, skills, and integrity needed to successfully enter the profession of Medical Laboratory Science and other health-related professional programs.

## **Program Learning Goals**

- **Goal 1:** Apply major concepts of human biology pertinent to MLS.
- **Goal 2:** Perform laboratory skills used by clinical scientists working in a diagnostic laboratory.
- **Goal 3:** Categorize laboratory testing and problem-solving as pre-analytical, analytical, and post-analytical
- **Goal 4:** Process and communicate pertinent clinical information.
- **Goal 5:** Demonstrate professionalism skills in the medical laboratory science field.

## **Graduate Competencies**

- Demonstrate appropriate specimen collection, processing, analysis, and reporting of results in a timely manner with accuracy and precision.
- Apply safety and governmental regulations throughout the pre-analytical, analytical, and post-analytical phases of clinical laboratory testing.
- Utilize the principles and practices of professional and ethical conduct while demonstrating appropriate communication skills to sufficiently meet the needs to educate patients and other healthcare professionals.
- Demonstrate professional development through continuing education in the field of Medical Laboratory Science.
- Put into practice administrative and supervisory skills as are relevant to the healthcare system and Medical Laboratory Science field.
- Employ the use of critical thinking and problem-solving skills to identify and evaluate:
  - Calibration, maintenance, quality assurance, and any necessary corrective actions
  - Appropriate confirmatory testing and reporting of abnormal patient results
- Assist with the implementation of test systems including correlational studies, reference ranges, statistical analysis, etc., to allow confident dissemination of accurate testing results.



## **Career Entry Level Description**

At the point of career entry, the Medical Laboratory Scientist, also known as Clinical Laboratory Scientist or Medical Technologist, will have proficiency in the medical laboratory testing areas of hematology, chemistry, microbiology, immunology, serology, body fluid analysis, urinalysis, immunohematology (blood banking), and molecular testing. This is acquired upon completion of the academic requirements at Michigan Technological University and successful completion of a Clinical Practicum.

## **Michigan Tech Equal Opportunity Policy**

In keeping with its responsibilities as an educational institution, Michigan Technological University is committed to a policy of affording equal opportunity to all of its employees, students, applicants for employment and applicants for admission without regard to race, religion, color, national origin, age, sex, sexual orientation, gender identity, height, weight, genetic information, or marital status. The University is also committed to a policy of educating and employing disabled individuals and veterans without discrimination. These policies are to be implemented with due regard for the relative qualifications of all involved.

## **MLS Program Accreditation**

Michigan Tech's Medical Laboratory Science (MLS) program is accredited by the following institution:

National Accrediting Agency for Clinical Laboratory Sciences  
5600 N. River Road, Suite 720  
Rosemont, IL 60018  
847-929-3597  
773-714-8880  
773-714-8886 (Fax)  
[info@naacls.org](mailto:info@naacls.org)  
[www.naacls.org](http://www.naacls.org)

# Clinical Practicum

## Prerequisites

Students who seek to begin their clinical practicum are required to have fulfilled all MLS program degree requirements (120 credits). Course descriptions and credit hours can be found on the [MLS website](http://www.mtu.edu/biological/undergraduate/medical/). (<http://www.mtu.edu/biological/undergraduate/medical/>)

## Criteria for Admission

Students seeking practicum placement must submit application essays to the Clinical Program Coordinator. They must have and maintain an **overall and departmental GPA of at least 2.75 or higher**. Students must demonstrate the qualities and attitudes that are essential as a competent professional in the MLS field (See Affective Domain objectives). Students working in the clinical setting are required to be up-to-date on their immunizations and must be able to provide proof prior to beginning their clinical practicum. Students may also be subject to a background check and drug screen prior to beginning their practicum.

## Practicum Course

Students will register for one 12 credit course, BL4612: SML University Clinical Practicum, for the semester they begin their practicum. The **recommended length** for the clinical practicum is 6 consecutive months. At a minimum, students will be on-site 40 hours per week for 20-24 weeks. **Practicum length is subject to change depending on the student's clinical site and established programs in place.** Students who are placed at some clinical sites may be required to complete a portion of their practicum at a nearby affiliated hospital for additional in-depth testing and procedures.

## Clinical Practicum Assignment

The MLS Program faculty anticipate having enough clinical sites for all students seeking placement into a practicum. If a shortage of sites does occur, students will be ranked per GPA in their MLS courses and assigned to clinical sites with regard to their preferred locations. If there is a tie with GPA, the student will be placed based on the hospital's preference. Students who were not placed will be assigned to a clinical site as soon as one becomes available, and the program will make every attempt to avoid situations of delayed placement.

## Awarding of Degree

After successful completion of the clinical practicum and BL4612, students will officially graduate with 132 credits and receive their diploma from Michigan Tech. **The awarding of the Medical Laboratory Science degree is not contingent on the student passing any national licensure exam.** Students may walk for graduation in the semester before the start of their clinical practicum, but will not receive their diploma until completion of their practicum. Students who wish to participate in the graduation ceremony in their final semester at Michigan Tech must fill out the “[Request to participate in commencement out of term](http://shorturl.at/douRS)” (shorturl.at/douRS) form.

## Clinical Practicum Policies & Procedures

The student is to become familiar with and abide by all rules and policies set forth by the clinical facility to which they are assigned. Failure to comply with any of the on-site policies or respect the authority of the staff will result in removal of the student from the site and potentially the program of study.

## Attendance

Students must report to the clinical facility punctually in accordance with the designated rotation schedule. We expect you to not miss any internship time, however, in some cases, you may have to be absent. If this is the case, you need a valid, documented excuse. For any absences, you **MUST** conform to the laboratory’s procedures for reporting your absence. **In the event that the student will be absent or late, they must notify the clinical supervisor AND MLS Program Coordinator prior to the scheduled meeting time.** Arrangements to make up for absences must be made with the clinical site by the student.

Students will have the following holidays & personal days off:

- Labor Day
- Thanksgiving Day
- Christmas Day
- New Year’s Day
- Memorial Day
- Independence Day

Students with a practicum of **6 months or less receive one personal and one sick day.**

Any absences above the designated amount must be made up by the student as approved by the clinical supervisor and MLS Program Coordinator prior to completing their clinical practicum.

## Trajecsys

A Trajecsys subscription will be provided to you during your internship. Trajecsys will be used to log your attendance and house your internship rotation evaluations. At the end of your clinical internship, your records will be available for you to download as a way to provide documentation of your clinical experience.

## Tests and Assignments

Tests and assignments will be available on Canvas at the start of the student's practicum. There will be small case studies and one exam for each of the major rotational areas. These exams and case studies are to be completed in accordance with each departmental rotation. Students must score a 70% or above on the exams to sufficiently pass the exam and practicum. On occasion, the clinical supervisor may approve time to work on the assignments during practicum hours.

Students are also required to complete weekly MediaLab (LabCE) exams and complete assigned Med Training modules (MTS) throughout the course of their practicum.

At the end of the practicum, students must submit a final project or report from something relevant to their experience. This could be rare or interesting clinical findings, a project they were involved in, or new instrumentation. All patient names and identifiers must be redacted in compliance with HIPAA regulations.

At the beginning of the clinical practicum, students will be required to complete a pre-clinical competency exam, which consists of 100 questions from various laboratory departments. In addition, an overall comprehensive exam will be given at the end of the clinical practicum. This exam is the post-clinical practicum exam and is composed of 100 questions from all departments of the lab. The student will have two hours to complete a proctored exam and will not be able to use any resources. Students must score a 70% or above to sufficiently pass the exam and practicum.

Additional exams, homework, or projects may be assigned by the clinical site. The student must sufficiently pass any assignments/exams given by the clinical site, per their grading scale, to successfully pass the practicum.

**Each student will be given a schedule prior to the start of their practicum that contains due dates for their rotational exams, case studies and other assignments. Late submissions will result in a 5% deduction for each day the assignment is past due.** If your schedule changes at any point during the course of your practicum, please let the Program Coordinator know immediately.

## Tuition, Fees, & Refund Policy

To complete the practicum and meet all degree requirements, students will enroll in BL4612, a 12 credit course. Students will only be charged for one semester at 12 credits, despite the course extending beyond a typical semester due to the length of the practicum. Students will remain at full-time student status and may be eligible for financial aid throughout the clinical practicum.

In addition to tuition as a part of the onboarding requirements, students are offered the opportunity to pay a one-time \$120 practicum deposit for BL4612 before the official start date of the clinical internship. The funds are stored in a secure account. After the completion of the clinical practicum, students will receive a check for \$240 (the original \$120 deposit plus a \$120 match from the MLS program) to be used to cover the cost of the ASCP BOC exam.

For more information, please see [Student Finance Policies](http://www.mtu.edu/catalog/policies/finance/) (<http://www.mtu.edu/catalog/policies/finance/>)

## Liability Insurance

Students enrolled in the MLS practicum and carrying out their practicum at an affiliated hospital are covered by the University's Student Medical Professional & General Liability coverage. Individual agreements containing liability insurance information are available upon request and are located in each clinical site affiliation agreement.

## Exposure to Biological Substances

Students enrolled in the MLS practicum should follow the [Michigan Tech Exposure Control Plan](https://www.mtu.edu/research/integrity/pdf/mtu-exposure-control-plan.pdf) (<https://www.mtu.edu/research/integrity/pdf/mtu-exposure-control-plan.pdf>) if they are exposed to any potentially infectious materials during the course of their practicum. Examples of exposure include accidental needlestick, fluid splashing into the eye, etc. **All exposures must be reported to the MLS Program Coordinator via phone within 24 hours of the incident occurring.** An incident report will be submitted to the University, so a phone call is required to obtain all necessary information as the form is filled out. Per University policies, seeking medical treatment in these events is the responsibility of the student.

## Essential Functions/ Technical Performance Standards

Essential Functions/Technical Performance Standards<sup>1,2</sup> represent the non-academic requirements of the program. Students must be able to meet and master program essential functions, or request reasonable accommodations to successfully complete these essential functions, in order to participate in the medical laboratory science/clinical practicum programs. All applicants are expected to:

### 1. Manual Dexterity:

Possess the gross/fine motor skills and hand/eye coordination to safely perform diagnostic procedures which includes performing phlebotomy, using chemicals, specimens, microbiology cultures, laboratory instruments and equipment, and computers

### 2. Visual Acuity:

- Differentiate different colors and shades, characterize clarity and viscosity of medical specimens, reagents, and chemical reaction end products
- Examine microscopic specimens and be able to differentiate color, shading, and structural differences
- Read text, numbers, and graphs in print, on computer monitors, and hand-writing
- Judge distance, depth, and 2 or 3 dimensional structures

### 3. Physical, Mental and Emotional Health:

- Function for an 8-hour work day under stressful conditions
- Be able to recognize emergency situations and react in an appropriate manner
- Move around the hospital and laboratory freely and safely
- Follow verbal directions with normal or corrected hearing
- Be able to bend, stoop and stand; lift 20 pounds; maintain prolonged sitting or standing positions; perform repetitive tasks
- Maintain concentration with distractions

### 4. Behavior:

- Be able to work independently, with flexibility and be adaptable to change
- Be willing to work with sharp objects, hazardous chemicals and infectious/biohazardous material
- Recognize situations that may be potentially hazardous
- Conduct work with honesty, compassion, ethical behavior and responsible actions
- Work as a team in regards to learning, tasks, problem solving and patient care

### 5. Intellectual and Creative Thinking:

- Perform complex interpretive testing, possess troubleshooting skills, and exercise sound judgment
- Recognize and correct deviations in testing
- Prioritize work, be productive, and accurate within realistic time allowances

### 6. Communication:

- The primary language for all verbal and written communication is English.
- Understand and follow verbal, non-verbal and written instructions
- Effectively communicate verbally and in writing
- Clearly present oral presentations to diverse audiences
- Comprehend technical materials: text, numbers, math, graphs, textbooks, journals, instructions, internet, manuals, etc.
- Prepare papers, reports and posters both independently and in group projects
- Take written, oral, computer and laboratory practical exams at the post-secondary level within established time frames
- Interact and communicate effectively and confidentially with laboratory peers, hospital staff, administration, and patients (it should be noted that patients will be of varying ages, and physical and mental states)
- Use computer software, instructional technology, and the Internet for purposes of communication and education

References:

1. Technical Performance Standards/Essential Functions for MTIMPM Hospital-Based Clinical Practicum Programs  
8/12/13
2. ASCLS Essential Functions 2012-2016

## Departmental Rotations

The **suggested** departmental rotations are as follows:

Department	Time in Rotation
Phlebotomy	1 Week
Hematology/Coagulation/Urinalysis <ul style="list-style-type: none"><li>● Hematology: 4 Weeks</li><li>● Coagulation: 1 Week</li><li>● Urinalysis: 1 Week</li></ul>	6 Weeks
Chemistry/Serology <ul style="list-style-type: none"><li>● Chemistry: 4 Weeks</li><li>● Serology: 1 Week</li></ul>	5 Weeks
Microbiology	6 Weeks
Blood Bank	6 Weeks
<b>Total Time in Practicum</b>	<b>24 Weeks</b>

On occasion, clinical sites may schedule students for afternoon, midnight, or weekend shifts to meet performance objectives. This may be in the event that quality control, maintenance of analyzers, certain tests/procedures are only carried out on these shifts. It is beneficial for students to experience the workload of varying shifts, as many new techs do not start out on day shift.

**Rotational length is subject to change with each clinical site and will be communicated to the student prior to the start of the practicum.**

## Performance Objectives/Clinical Competencies

Students should be able to perform all laboratory procedures described in the clinical competencies to the satisfaction of the student, the clinical supervisor and the Program Coordinator. Clinical competencies are found at the end of this manual and must be submitted at the end of BL4612. Students should demonstrate a professional and responsible attitude through performance of procedures, concern for patient care and safety, and cooperation and respect for laboratory supervisors and co-workers.

## Evaluation

Clinical instructors will complete the evaluation forms at the middle and end of each departmental rotation. Evaluations for students are to be filled out online through Trajecsys. The criteria for evaluation is located on pages 26-29 of this manual. **It is your responsibility to inform your clinical instructor to fill out these evaluations on Trajecsys.** Evaluations will be based on the student's bench work (psychomotor), as well as their professionalism (affective). **Students must receive a satisfactory affective evaluation, and an average of 80% for each psychomotor departmental rotation to successfully complete the clinical practicum.** The evaluation forms will become part of the student's clinical practicum file at Michigan Tech.



## Final Grade

Students will be given a grade of P (Progress) until completion of the practicum, when a letter grade will be calculated. To obtain a passing grade, students must:

- ✓ Pass all rotational exams with a grade of 70% or above
- ✓ Sufficiently complete all rotational case studies
- ✓ Complete the final project/case study with a grade of 70% or above
- ✓ Turn in completed/signed off clinical competencies
- ✓ Turn in completed/signed affective evaluations from clinical instructors with satisfactory scores
- ✓ Turn in completed/signed psychomotor evaluations from clinical instructors with an average of 80% or higher for each departmental rotation
- ✓ Pass the comprehensive final exam with a grade of 70% or above

The final grade for each departmental rotation will be an average of exams and bench work. The final grade for the course will be an average of department grades, final project grades, and post-clinical exam grade.

**The following grading scale will be used for letter grades:**

Letter Grade	Percentage
A	93% - 100%
AB	85% - 92.9%
B	80% - 84.9%
BC	75% - 79.9%
C	70% - 74.9%
CD	65% - 69.9%
D	60% - 64.9%
F	<60%
I	Incomplete; given only when a student is unable to complete a segment of the course because of circumstances beyond the student's control. A grade of incomplete may be given only when approved in writing by the department chair or school dean.
X	Conditional, with no grade points per credit; given only when the student is at fault in failing to complete a minor segment of a course, but in the judgment of the instructor does not need to repeat the course. It must be made up within the next semester in residence or the grade becomes a failure (F). A (X) grade is computed into the grade point average as a (F) grade.

## **Student Grievance & Disciplinary Action**

MLS program officials will monitor student progress during their time at clinical sites. It is important to create a trustworthy and professional atmosphere in the clinical setting.

Students should be aware that clinical affiliates and MLS program officials maintain the right to remove a student from the clinical practicum if rules and regulations of either the clinical site or the MLS program are violated, or students exhibit behaviors that are disruptive or dangerous to the laboratory, employees, and/or patients.

For Michigan Tech's policy on student grievance and appeals, please see the [Dean of Students Website](http://www.mtu.edu/deanofstudents/academic-policies/grievance/). (<http://www.mtu.edu/deanofstudents/academic-policies/grievance/>)

Any violations of MLS program/clinical site rules will result in disciplinary action. This can include, but is not limited to:

- A meeting with the MLS Program Coordinator and clinical instructor
- Receiving a grade of "F" in the section(s) most affected by the behavior
- Suspension of the student from the program for an amount of time to be determined by the Program Coordinator and clinical supervisor, with the opportunity to continue after suspension
- Permanent removal from the practicum and clinical site
- Permanent removal from the MLS program

The following behaviors will result in disciplinary action:

### **A. Dishonesty**

- Honesty, accountability, and integrity are at the core of every hospital lab and of patient care. Instances of dishonesty may include behaviors such as cheating on quizzes/exams, lying, taking prolonged breaks which are not approved, etc.

### **B. Violation of confidentiality**

- Patient information is highly confidential. This information may only be disclosed to other laboratory colleagues, the attending physician, the pathologist, and other approved personnel. A violation of confidentiality is a serious problem. Due to HIPAA protections, you are not permitted to disclose any patient information to family members, friends, or online. Violations of patient confidentiality can result in legal action and will result in one or more of the following consequences described above.

### **C. Chronic tardiness or absences**

- All absences must be approved by the Clinical Supervisor prior to the day the student is to be absent. Any unapproved absences must be made up by the student before they may complete their practicum. In consultation with the Program Coordinator, the Clinical Supervisor may recommend appropriate make up times. These may include weekends, afternoon shifts, or at the end of the clinical

practicum. Excessive tardiness and absences will result in a careful review of the student's progress and one or more of the above consequences.

- If a student is absent due to illness, the Clinical Supervisor and Program Coordinator should be notified at least one hour prior to their scheduled start time. This absence should be called in and emailed to both the Clinical Supervisor and Program Coordinator.

**D. Arriving at the clinical site with impaired functional abilities**

- Arriving at the clinical site under the influence of drugs or alcohol, with lack of sleep, or for any other reason that would prevent the student from satisfactorily performing their duties will not be tolerated. One or more of the consequences above may follow.

**E. Exhibiting unprofessional behavior**

- Students must remain professional and follow the guidelines outlined to them at the beginning of their practicum. See the list under the Professional Behaviors heading for examples of professional and unprofessional behavior.

## **Professional Appearance Policy**

Pursuing a career in Medical Laboratory Science results in working directly with patients, physicians, administration, and the public in general. Consequently, your appearance in these situations is important and serves as part of your first impression. Each clinical setting will have their own specific regulations that the student must follow while completing their practicum. While each of these policies may vary slightly, the department has come up with a comprehensive code that reflects the most typical policies found in clinical settings that the student is required to abide by while completing their practicum.

1. No open-toed shoes are to be worn at the clinical site. Athletic shoes may be acceptable, but they must be clean and not scuffed.
2. Fingernails should be kept clean and short, as long nails have been shown to harbor microorganisms. Artificial nails (including but not limited to acrylics, wraps, tips) are prohibited.
3. Hair should be kept neat and clean with no unnatural colors\* (purple, blue, etc.). Long hair must be neatly pulled back away from the face.
4. Personal hygiene is important and must be maintained throughout the clinical practicum experience. Perfumes and colognes must be avoided, as some patients and colleagues may be particularly sensitive to these.
5. In the event that the student does not wear scrubs, clothing must remain professional. Business casual is recommended. Cargo pants, shorts, jeans, leggings, yoga pants, and low-cut tops are unacceptable. Follow all dress code policies as set by the clinical site.

6. Jewelry and rings should be kept to a minimum, especially those that interfere with proper use of nitrile gloves. Visible body piercings should be limited to just the ears. \*  
All other visible body piercings must be removed while in the clinical setting.
7. All visible tattoos should be covered by clothing, long sleeves, etc.\*

\* Please refer to and abide by your hospital's specific dress code and policy.

## **Professional Behaviors**

**Examples of professional behavior include (but are not limited to) the following:**

- Respects other students, faculty, staff, and their opinions and beliefs
- Arrives to the lab on time and prepared
- Takes responsibility for their own learning
- Completes all work with honesty and integrity (doing the right thing when no one is looking)
- Displays a genuine interest and willingness to learn and improve
- Maintains a calm and collected behavior and positive attitude when things do not go as planned
- Taking initiative in the lab
- Uses technology appropriately (note: cell phones are **NOT** permitted in the lab; it is encouraged that students limit cell phone use and use their time to interact and get to know their colleagues)

**Examples of unprofessional behavior include (but are not limited to) the following:**

- Displays rude behavior or is disrespectful to other students, faculty, and staff (this includes body language, eye rolling, etc.)
- Repeated tardiness to your practicum, failure to turn assignments in on time, showing up unprepared, taking unapproved breaks or prolonging your break
- Performs the bare minimum to accomplish a task or assignment
- Swearing, discriminatory, or intimidating/threatening language
- Disrespectful language towards other technologists or students in the lab
- Demonstrates a lack of interest in subject matter
- Falling asleep at the bench
- Demonstrates a disruptive behavior in the laboratory (arriving late, cell phone use while instructor/other students are speaking)
- Inappropriate use of technology (use of cell phones in the laboratory)

## **Clinical Practicum Appropriate/Recommended Behavior**

As a student you have the responsibility to do your best and learn as much as possible. Here is a list that you should follow to be successful during your practicum:

1. Adhere to the attendance policy and notify your lab supervisor and Program Coordinator of any tardiness or absences in a timely manner.
2. Be involved with and observe as many tests and procedures as possible.
3. Use free time during the day to study your notes and textbooks if approved by the clinical supervisor.
4. Establish neat and organized work habits.
5. Ask for assistance with procedures you are unfamiliar with or unsure of. Refer to procedure manuals rather than always using other laboratory staff as a crutch.
6. If you have been sufficiently trained and signed off on a task or test, take the initiative to perform it yourself without waiting to be asked.
7. Review your performance with the clinical supervisor regularly to determine areas in which you can improve.
8. Become familiar with the clinical lab and learn where reference materials, reagents, and other supplies are located.
9. Be sure to follow all hospital, lab, and departmental policies and procedures.
10. Be aware of your departmental rotations throughout the lab, and know who you report to and at what time.
11. Observe all rules on professional appearance and behavior of the hospital and clinical laboratory.
12. Always conduct yourself in a professional manner.
13. Interactions with faculty and staff in the hospital should be kept professional.

### **As a professional:**

1. Always maintain patient confidentiality and abide by all HIPAA regulations.
2. Address patients respectfully and state your name and department upon entering patient rooms. Treat patients and their family members with compassion and empathy.
3. Check patient wristbands or ask for a second identifier, such as date of birth, to ensure you have the correct patient.
4. Always label patient specimens at the bedside – do not remove patient specimens from the room prior to labeling them.
5. Clearly state your name and department when answering the telephone.
6. Always arrive on time.
7. Observe hospital procedures for entering rooms with special precautions, such as isolation rooms.
8. Follow departmental rules and regulations and observe the dress code.
9. Be respectful of your coworkers and other hospital staff.

### **Safety:**

1. Wash hands regularly and abide by all hand washing regulations set by the clinical site

2. Proper personal protective equipment (PPE) is to be worn in the laboratory as well as in other areas of the hospital (patient rooms, isolation rooms) as indicated by the clinical site
3. Be sure that you have been properly trained on all equipment prior to using it.
4. Make sure all tools and equipment is in safe working order.
5. Report any accidents, safety concerns/hazards, defects in tools or equipment to the lab supervisor immediately.
6. Always ask for help before doing anything that you are not confident you can do on your own.
7. Be sure you know where to locate fire extinguishers, as well as how to operate them.
8. Keep flammable material and reagents away from fire and heat.
9. Abide by all safety regulations set by the clinical practicum site.

### **Service Work Policy**

1. Students are not to be used as substitutes for qualified staff.
2. Students are only permitted to perform procedures when supervised by qualified staff until competency is established.
3. Laboratory staffing should not rely upon student work.
4. The student's work in each rotation should be signed/co-signed by the appropriate bench tech.
5. If the student is also an employee, the student will not be evaluated as part of the educational process, when activities are performed while in the employee capacity.

During the practicum, students may accept a job at the hospital outside of their clinical practicum hours. Students who accept a job may not work during their scheduled practicum hours, as this time is for gaining important clinical experience under the guidance of qualified staff. Service work must be voluntary on both sides - the laboratory does not have to offer a paid job to students, and students do not have to take a paid job to complete their practicum. If clinical affiliates are not adhering to the Service Work Policy, please contact the Program Coordinator immediately.

### **Health Information Portability and Accountability Act (HIPAA)**

The Health Information Portability and Accountability Act (HIPAA) of 1996 provides the national standard for protecting individuals' medical records and other personal health information. Students are provided with information on the Privacy Rule while in the MLS program and at pre-practicum orientation. Disclosure of patient information to any unauthorized person could result in fines or imprisonment, and is ground for dismissal from the program. Never discuss patient results outside of the laboratory and do not release any patient information to unauthorized individuals.

## MLS Certification Exam Application Information

The purpose of your practicum is to gain hands-on learning experience that will adequately prepare you to sit for a national certification exam to become a licensed Medical Laboratory Scientist. As a student in the University route practicum, you are encouraged to sit for the ASCP Board of Certification (BOC) exam or the American Medical Technologists (AMT) exam.

Your certification exam should be taken soon after your practicum is complete. The longer you wait to take your boards, the less hands-on information you may retain. If you don't use it, you lose it. Please see below for information regarding each certification exam.

### ASCP Board of Certification Exam Information

#### Program Information for Certification

Examination Category and Route: Medical Laboratory Scientist (MLS) Route 1

Accredited Program Information: NAACLS

Date Program Began: SML University Clinical Practicum (BL4612)

Date Program Ends: Last day of clinical practicum

#### ASCP BOC Certification Process

The following information was obtained from the ASCP BOC website. Please **review this website thoroughly on your own** prior to the certification process to ensure no changes have been made and you complete all of the necessary steps and documentation required to sit for your boards. The document can be accessed by visiting [www.ascp.org](http://www.ascp.org) and navigating to the Board of Certification tab or via [this link \(https://www.ascp.org/content/docs/default-source/boc-pdfs/exam-content-outlines/ascp-boc-us-procedures-book-web.pdf\)](https://www.ascp.org/content/docs/default-source/boc-pdfs/exam-content-outlines/ascp-boc-us-procedures-book-web.pdf).

Once you submit your application, you have a **three-month window** to sign up to take the boards. If you fail to sign up within this three-month period, you **lose your application fee** and will have to pay again the next time you apply.

**Step 1:** Meet the eligibility requirements for the appropriate examination category as shown on pages 4 – 17 before submitting your application. You **MUST** indicate a route of eligibility on your application or it will not be processed.

To be eligible for this examination category, an applicant must satisfy the requirements of at least one of the routes. A Route of Eligibility **MUST** be indicated on your application. If no Route of Eligibility is designated, your application will not be processed.

- Route 1: A baccalaureate degree from a regionally accredited college/university including courses in biological science, chemistry, and mathematics, AND successful completion of a NAACLS accredited Medical Laboratory Scientist program within the last 5 years.
  - The education received from a NAACLS accredited MLS program is acceptable for a period of five (5) years from the date of completion of that program. After five years, the applicant's eligibility will be based on clinical laboratory experience as stated in the current examination requirements.  
(<https://www.ascp.org/content/docs/default-source/boc-pdfs/exam-content-outlines/ascp-boc-us-procedures-book-web.pdf>)

**Step 2:** Complete the [online application](https://www.ascp.org/content/board-of-certification/apply-now-check-status-update-info) (<https://www.ascp.org/content/board-of-certification/apply-now-check-status-update-info>) and submit the following:

- Appropriate application fee (credit card or check).
  - Application fees are non-refundable.
- Necessary documentation required to verify your eligibility.
  - You must submit your **official** transcript to the ASCP. This should be done AFTER your grade is finalized in BL4612 and the Program Director approves your audit as complete. You will have 45 days from the submission of the application to send these documents to ASCP.

**Step 3:** Receive notification by email to take the examination on computer at a Pearson Professional Center within a three-month period, upon determination of your examination eligibility.

**Step 4:** Schedule an appointment to take the examination within the three-month period indicated in your admission notification.

**Step 5:** Take the examination at the Pearson VUE center of your choice. Immediately after you complete the examination, you will see your preliminary pass/fail result on the computer screen.

- Students who do not pass the exam must submit a new application to register for a retake. You do NOT need to submit eligibility documents again, but you must pay the exam fee again. You will then be able to schedule a new testing date, though this date cannot be within the same 3-month period as the first exam.

**Step 6:** Receive notification email to login and view your final examination score.

**Step 7:** Receive your certificate in approximately 4-6 weeks verifying your certification upon passing the examination, valid for three years, and the Credential Maintenance Program booklet containing information on maintaining your certification. Your title will be MLS(ASCP)<sup>CM</sup>.



## American Medical Technologists Certification Exam Information

The following information was taken from the [AMT website \(https://americanmedtech.org/\)](https://americanmedtech.org/). Please review this website thoroughly on your own prior to the certification process to ensure no changes have been made and you complete all necessary steps and documentation. You can view this information by navigating to the “certification” tab. There are a variety of resources regarding the AMT examination process, such as the AMT Candidate Handbook and FAQ, within their [webpage \(https://americanmedtech.org/Certification/Get-Certified\)](https://americanmedtech.org/Certification/Get-Certified).

### AMT Exam Certification Process

**Step 1:** Create an account. You will need to add Michigan Tech as your school. Please contact the Program Coordinator for the organization ID. Once your account has been created, you will be able to apply online for the exam.

**Step 2:** Choose your certification exam (MLS), enter your education route. You will have to choose Michigan Tech again by entering in the same organization ID. AMT requires official, finalized transcripts sent online through the Registrar’s Office. You can skip the employment history section and continue onto the payment. You are paying individually for the exam.

Once you have paid, your application will be complete. You can see your application summary and status by going to the AMT Portal at any time. Your application is good up to ONE YEAR. Please allow 1-2 weeks for processing. The exam fee is non-refundable.

**Step 3:** Schedule your exam. You will receive an email from AMT with directions on how to schedule your exam. You will schedule the exam at a Pearson VUE testing center. You will need to create a separate account with Pearson to do so.

**Step 4:** Take the exam at a Pearson VUE center. Please make sure to bring two valid forms of matching ID. See the Pearson VUE website or AMT Candidate Handbook for more information. You are allotted 3.0 hours for the AMT MLS exam, which is a computerized test consisting of 200-230 questions. You will receive your immediate pass or fail result on the screen upon completion of the exam.

In the event that you fail the exam, you are able to schedule a retake 45 days after the failed attempt. Before leaving the Pearson VUE center, you will receive a score breakdown with categorical scores to aid in your study preparations for your next attempt. A retesting fee is required. You are limited to 4 lifetime attempts of the AMT MLS exam.

**Step 5:** Maintaining certification. Upon passing the AMT, your title will be MLS(AMT). You will be responsible for maintaining your certification at the specification of AMT, which includes CCP credits and renewal fees. Please see the AMT website for more information regarding how to maintain certification and what can qualify as CCP points.

## National Certification Resources

In addition to the provided review books, ASCP offers a *study guide app*, content outlines, and suggested reading lists, along with online practice tests to ensure that you have sufficiently prepared yourself for the exam for the ASCP BOC exam. AMT offers a very detailed content guideline and online practice exams for purchase on their website.

For students with plans to relocate, keep in mind that successful certification does not automatically grant you a state license. The requirements for licensure vary by state and must be met to become licensed in a state. Students should review state requirements if you have definite plans to relocate after your practicum.

The following states have laboratory personnel licensure requirements as of 2023-2024:

- California
- Florida
- Georgia
- Hawaii
- Louisiana
- Montana
- Nevada
- New York
- North Dakota
- Rhode Island
- Tennessee
- West Virginia

## **Program Closure Teach Out Plan**

NAACLS requires the program to have a “teach out” plan in case the program unexpectedly closes due to natural or unnatural disasters or permanent closure. Intentional closure of the program will be communicated to all students immediately. In case of disaster the university will inform students of a plan for continuation of their education as soon as that information is available. NAACLS will be notified and a teach out plan will be provided to them within 30 days of the official announcement of program closure.

### **Prospective students:**

- In the case of permanent closure students will be informed that the program will not take a new cohort due to program closure.
- In the case of a natural or unnatural disaster the program will work with other laboratory science programs to continue education and training until training can resume at the college.
- Students will be counseled in applying to other local programs.
- Program closure information will be communicated to incoming students through our program email list.

### **Current students:**

- Students will be informed of program closure.
- In the case of a natural or unnatural disaster the program will work with other laboratory science programs to continue education and training until training can resume at the college.
- In the event of a mandated permanent closure currently enrolled students will be allowed to complete the program.
- The Program Director will be designated to clear students applying for the certification exam.

# EVALUATIONS

## Performance Objectives/Competencies Evaluation Scale

Please use the following scale and descriptions for evaluation of the student's performance in each department during their clinical rotation. **The student is responsible for ensuring that all evaluations have been completed/signed off on Trajecsys as they complete departmental rotations.**

**5: Exceptional (100%):** The student can complete all objectives/procedures ahead of schedule with a high degree of competency and self-direction. The student seeks out additional tasks, when appropriate, and goes beyond what is expected of them. Excellent teamwork and communication skills. Accurately performs testing, work rarely needs repeating. Excellent, well-organized work habits. Quickly recognizes potential discrepancies/problems and identifies the correct course of action. Requires minimal prompting from supervisors by the end of each departmental rotation, catches on to new procedures quickly, performs tasks with confidence and independence.

**4: Above average (90%):** The student is highly motivated and completes objectives/procedures on time with an acceptable level of competency. The student willingly accepts additional tasks, when appropriate. Performs tasks with a high degree of accuracy, occasionally needs to repeat work. Good work habits, teamwork and communication skills. Recognizes potential discrepancies/problems and can determine an accurate course of action with little prompting from peers. Requires occasionally prompting from supervisors when performing tasks independently by the end of each departmental rotation.

**3: Average (80%):** The student can complete most objectives/procedures in a timely fashion with an acceptable level of competency, but improvement is necessary. Acceptable work habits, teamwork, and communication skills. Average performance; repeat work is occasional in frequency. Input from peers may be needed to determine appropriate course of action when problem solving but student demonstrates sufficient follow through. Requires supervision and guidance when performing tasks independently by the end of each departmental rotation.

**2: Below Average (70%):** Additional time needed to be able to complete objectives/procedures at a desirable level of confidence and independence. Requires nearly constant guidance and prompting to be able to accurately and sufficiently perform tasks by the end of each departmental rotation. Repeat work is frequent; performance requires significant improvement. Has a difficult time recognizing discrepancies or potential problems. Does not respond well to constructive feedback, lacks appropriate communication skills.

**1: Unacceptable (60%):** Is unable to accurately or sufficiently complete objectives/tasks. Requires constant supervision or is unable to perform testing. Does not recognize potential problems or discrepancies and makes significant mistakes that would compromise patient safety. Has poor time management, teamwork, and communication skills.

## **Evaluation of Psychomotor Objectives:**

**Clinical instructors: Please use the psychomotor grading scales and descriptions to complete the evaluations for each departmental rotation on Trajecsys.**

Students will be evaluated for psychomotor skills both mid-rotation and at the end of each departmental rotation. The evaluation criteria include:

- ✓ Completion
- ✓ Accuracy
- ✓ Problem-solving
- ✓ Efficiency
- ✓ Organization
- ✓ Ability to perform independently
- ✓ Ability to work as part of a team

Instructors will grade students based on the above psychomotor evaluation scale. Instructors will also have the opportunity to leave any comments or feedback on the student's performance on the evaluation.

Students: You are responsible for ensuring completion and submission of the evaluation on Trajecsys. **You must receive an average of 80% or above on your psychomotor evaluations to sufficiently pass.**

## Description of Affective Objectives:

Please use these descriptions as a guide when evaluating the student on affective objectives.

### I. Affective Domain

- 1. The student consistently adheres to safety rules in all areas of the laboratory by:**
  - a. Washing hands frequently
  - b. Not eating, drinking, or applying make-up in the laboratory
  - c. Wearing gloves, lab coat and protective eye wear as the lab policy states
  - d. Reporting all accidents to the supervisor immediately
  - e. Processing and disposing of all biohazard substances appropriately
  - f. Following all laboratory and hospital safety rules set by the clinical facility
- 2. The student demonstrates punctuality and attendance by:**
  - a. Arriving to the clinical site as scheduled on time and prepared to begin
  - b. Returning from designated breaks on time
  - c. Completing all rotational exams on time
  - d. Performing laboratory tasks as assigned in a timely manner
- 3. The student maintains a neat and professional appearance and workspace by:**
  - a. Adhering to the dress code set by the clinical site
  - b. Maintaining personal hygiene
  - c. Keeping long hair pulled back from the face
  - d. Routinely cleaning and organizing the bench, ensuring its neatness
- 4. The student demonstrates an eagerness to learn and improve by:**
  - a. Asking relevant questions to further his or her knowledge of medical laboratory sciences
  - b. Following directions given by supervisors
  - c. Asking questions when unsure of a policy or procedure
  - d. Effectively responding to constructive feedback
- 5. The student maintains a helpful, positive attitude by:**
  - a. Performing all tasks willingly
  - b. Being respectful to all hospital staff and personnel
  - c. Not becoming defensive when given constructive feedback
  - d. Helping others in the lab when appropriate
  - e. Not becoming discouraged during the learning process
- 6. The student demonstrates that he or she possesses appropriate interpersonal skills by:**
  - a. Communicating effectively with hospital staff and patients
  - b. Answering phones with appropriate etiquette
  - c. Being a respectful, courteous listener and responding promptly to questions
  - d. Using cellphones only when appropriate (break, lunch)
- 7. The student handles the potential stresses of the laboratory appropriately by:**
  - a. Ensuring all supplies are kept well-stocked
  - b. Working diligently, efficiently and prioritizing work as necessary
  - c. Staying focused on the tasks at hand

**8. The student demonstrates professional ethics by:**

- a. Maintaining patient confidentiality and abiding by all HIPAA regulations
- b. Does not discuss patient findings unless necessary in carrying out his or her duties
- c. Reporting patient results only to the correct authorized personnel
- d. Being upfront and honest about potential errors or near-misses
- e. Treating all patients with respect and kindness
- f. Not gossiping about hospital staff or patients

**Evaluation of Affective Objectives:**

**Clinical instructors: Please use the descriptions above to complete the evaluations for each departmental rotation. Affective objectives are graded as satisfactory or unsatisfactory. If a grade of unsatisfactory is recorded, please be sure to specify the reason in the comments.**

Students will be evaluated for affective domain objectives both mid-rotation and at the end of each departmental rotation. The evaluation criteria include:

- ✓ Safety
- ✓ Punctuality/Attendance
- ✓ Neatness of appearance/work space
- ✓ Desire to learn and improve
- ✓ Attitude
- ✓ Interpersonal skills
- ✓ Handling laboratory environment
- ✓ Professional ethics

Students: You are responsible for ensuring completion and submission of the evaluation on Trajecsys following each departmental rotation. Affective objectives are graded as satisfactory or unsatisfactory.

## Medical Laboratory Science Practicum Manual Signature Page

Printed Name \_\_\_\_\_

**Instructions:**

1. Please read each statement below.
2. **INITIAL** each statement in the space indicated to signify your agreement to abide by the policies and procedures in this Handbook.
3. Sign and date on the lines below.
4. Have your instructor review for completeness.
5. Upload into the appropriate assignment in Canvas.

	INITIAL	STATEMENT
1.		I have had an opportunity to carefully review the MLS Student Handbook and have had an opportunity to have my questions answered.
2.		I have read and agree to comply with the student policies and procedures as outlined in the MLS Student Handbook. Furthermore, I will agree to and will comply with the course requirements as listed in each course Syllabus and Student Policies of the Medical Laboratory Technician Program.
3.		I understand that my clinical schedule may require that I travel or perform rotations during non-traditional hours.
4.		I have been informed that the program will create my clinical rotation schedule and I am not allowed to change it.
5.		I will adhere to the professionalism statement and follow all HIPAA guidelines.
6.		I have reviewed the Essential Functions/Technical Performance Standards and I am able, to the best of my knowledge, to meet them.
7.		I agree to criminal background checks and agree to immediately notify the MLS Program Director in writing of any subsequent changes in criminal history that occur after the admission background check has been completed.
8.		I understand that while performing my regularly assigned duties I may be exposed to blood, body fluids, or tissues. I will use the appropriate personal protective equipment required when there is an inherent potential risk for mucous membrane or skin contact with blood, body fluids or tissues. I understand that I may be subject to disciplinary action if I fail to use available personal protective equipment.
9.		I have been informed regarding the inherent health and safety hazards and release MTU from any liability for such hazards.
10.		I will allow MTU to send my employer an “Employer Survey” which allows my employer to evaluate my preparation for an entry level position as a Medical Laboratory Scientist. This information will be used to improve the program at MTU.

Signature \_\_\_\_\_

Date \_\_\_\_\_



## **Clinical Practicum Competencies**

Clinical practicum competencies are required to be satisfactorily completed before students are able to pass BL4612. Practicum students will receive a physical binder and competency checklists prior to their start date. Students will keep this binder with them as they rotate on the bench in various departments. Clinical education coordinators, laboratory supervisors, or medical technologists who are working with the student will check off competencies at the level(s) which they are performed. There are three levels: discussed, observed, and performed.

“Discussed” competencies are those that are not performed at the clinical site. The student and medical technologist/education coordinator may discuss the technique or objective in question if they are unable to observe or perform the task. “Observed” involves the student watching the technologist or supervisor perform the task. “Performed” is the student correctly completing the task under the supervision of the medical technologist.

Students and the clinical sites should aim to be checked off at the “performed” level for most, if not all, of the required competencies. Students are responsible for submitting their completed competency checklists for each departmental rotation via Canvas. The checklist and required competencies are found in the document provided on the next pages.

# **Michigan Technological University Medical Laboratory Science Program Clinical Practicum Competencies**



**Michigan Technological University**  
**Medical Laboratory Science Program**  
**Clinical Rotation**

Over the course of the clinical practicum, Michigan Tech Medical Laboratory Science students will rotate through all laboratory departments and perform current routine procedures by using modern testing procedures and equipment. Appropriate amounts of time are spent working in each discipline: **Hematology/Coagulation, Clinical Chemistry, Urinalysis/Body Fluids, Microbiology, and Immunohematology (Blood Bank).**

Objectives for the rotation are considered met when clinical instructors, having observed the student satisfactorily perform the listed competencies, checks off the appropriate competency in the column under "Complete." The competencies are designed to meet the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) requirements for entry-level practitioners for pre-analytical, analytical and post-analytical knowledge and skills.

**Instructions:**

1. The clinical staff will provide the student with an orientation to the laboratory. A qualified staff member will complete the “**Orientation to Clinical Site**” form to document this has been done. **NOTE:** If a student completes more than one rotation at a site the orientation only needs to be performed one time.
2. Each rotation has a set of an “**Assessment of Competencies**” form. The instructor will mark the appropriate method(s) used to determine competency:
  - a. D = Demonstration – the instructor will discuss and demonstrate the skill.
  - b. O = Observed – the student will observe the clinical instructor performing the skill..
  - c. P = Performed - the clinical instructor will observe the student performing the skill
  - d. More than one method may be used to assess competency or discussing the item if it is a discussion only item.
3. As a student progresses through the rotation the clinical instructor will check the appropriate boxes for each clinical competency discussed and/or observed.
4. If the student has NOT satisfactorily performed a required competency the clinical instructor who observed, it will check the box marked "NS" and date and initial it. The clinical instructor will fill in the “Failed Clinical Competency Action Plan” form which will include remediation and additional practice followed by re-evaluation. Additional failure to achieve competency in a required skill will result in a failed rotation.
5. At the end of each clinical rotation a qualified clinical instructor, lab supervisor, education coordinator, etc. will review work performed by the student and document on the form that the student is progressing towards competency. This is crucial documentation in the event that a student is failing to make progress in demonstrating entry level competency in any of the required skills listed. This will allow an action plan to be put in place to assist the student in gaining competency. See item #4 above.
6. At the end of the rotation the clinical instructor will complete, sign, and submit a “**Clinical Rotation Evaluation**” form. If more than one clinical instructor has worked with the student, it is recommended that the instructors come to a consensus on the score to be awarded. The Average Score on this form must be 76% or higher for the student to successfully complete training in that department (See Grading Policy in clinical course syllabi.).
7. The following rotations will require a specific number of procedures to be successfully completed to ensure competency: hematology manual differentials, urinalysis microscopics, blood bank procedures and gram stains. Recording results sheets will be completed by the student and will be reviewed by qualified staff for accuracy. No patient identifying information will be recorded on the forms to maintain compliance with HIPAA.

**Michigan Technological University  
Medical Laboratory Science Program  
Failed Clinical Competency Action Plan Form**

<b>Student Name (Please Print)</b>	
<b>Clinical Instructor Name (Please Print)</b>	
<b>Clinical Rotation</b>	
<b>Clinical Site</b>	

**Instructions:** **This form is only filled out when a student has, on two separate occasions, made the same type of error.** Additional samples must be provided to allow the student an additional opportunity to demonstrate competence. Failure to demonstrate competence will result in the clinical instructor assigning a “NS” (Not Satisfactory) for that competency for the rotation. The MTU Practicum Coordinator must be notified.

**Instructor:**

1. Document specific skill(s) student is deficient in the chart below.
2. Explain error to student and discuss and/or demonstrate correct method.
3. Please contact the Michigan Tech Practicum Coordinator to discuss the issue.

**Student:**

1. Review written procedure.
2. Explain procedure to instructor.
3. The student will be given opportunities for practice and improvement.
4. Perform procedure under direct supervision.
5. After repeating the procedure, the instructor will check the appropriate column, “A” for acceptable or “U” for unacceptable.
6. If, after remediation and practice, “U” is checked contact MTU faculty immediately so they can meet with the student and instructor.
7. Upon completion of the Action Plan both the student and instructor will initial and date the form.

<b>Student Name:</b>			
<b>Instructor:</b>			
<b>Date</b>	<b>Competency achieved</b>	<b>A</b>	<b>U</b>
	Competency number:		
	Competency number:		
	Competency number:		
	Competency number:		
	Competency number:		

**Action Plan successful (circle one):** YES NO

\_\_\_\_\_  
**Student Signature**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Instructor Signature**

\_\_\_\_\_  
**Date**

## Urinalysis Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

**Instructions:**

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
a. Place to securely store belongings		
b. Location of restroom		
c. Location of break room		
d. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		

ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
b. Incident Reports		

**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_

Department: URINALYSIS

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Skill/Competency	Method			Complete			Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
<b>1. Specimen Processing</b>										
a. Describe the parameters of an acceptable specimen and reasons for rejection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. State the appropriate storage temperatures (RT and Refrigerator) and time limits for urine samples.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. State the special handling precautions for urines requiring a culture.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>2. Quality Control</b>										
a. Performs quality control using control reagents and verifies that control reagents are within set limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Performs daily maintenance on centrifuge, wiping down inside and out.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>3. Instrumentation</b>										
a. Performs daily maintenance on urine analyzer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Performs equipment calibration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Analyzer used:										

Perform chemical examination on a <b>MINIMUM</b> of 20 urine specimen using the manual or automated methods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
4. Report microscopic examination on a <b>MINIMUM</b> of 20 using the quantitation of elements as identified in procedure with results being within +/- 20% of instructor's/instrument's values.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
5. Correlate microscopic findings with chemical analysis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
6. Recognize abnormal results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
7. States the clinical significance of abnormal or unexpected results on all tests performed in response to oral or written questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
8. State the clinical significance of abnormal results obtained, correlating patient results as to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
9. <b>OPTIONAL:</b> Perform and report any of the following confirmatory tests accurately if the test is performed at the site.									
a. Ictotest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
b. Acetest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
c. SSA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
d. Clinitest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
e. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
f. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		

Additional Comments:

## Hematology Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

### Instructions:

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. **If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.**

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
e. Place to securely store belongings		
f. Location of restroom		
g. Location of break room		
h. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		
ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
c. Incident Reports		



**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_ Department: **HEMATOLOGY**

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
<b>1. Specimen Processing</b>										
a. State the sample types acceptable for each test performed in the hematology department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. States the reason for rejection of samples according to department protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Evaluates samples for suitability for use: clots, additive, QNS, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Correctly identifies patient samples and prioritizes samples based on urgency of test request.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Identifies pre-analytical errors which will interfere with specific tests, i.e., high hematocrits, hemolysis, lipemia, cold agglutinins, incorrect tube additive, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>2. Quality Control – student must be familiar with QC procedures and corrective action to take for each of the following:</b>										
a. Reviews QC and preventive maintenance procedure for each hematology analyzer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Verifies that quality control results are within set limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform or observe instrument quality control samples.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
d. Verifies that quality control results are within +/-2 standard deviations of predetermined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Reviews Levy-Jennings charts for shifts and trends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Discuss instrument calibration required and time frame.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Discuss instrument comparison/correlation studies to bring new lot numbers of control and/or reagents into service.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>3. Hematology analyzer operation</b>										
a. Read/discuss principle of the instrument operation or test procedure reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform or observe instrument startup procedure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform or observe instrument shutdown procedure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Performs or observe daily maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Performs or observes other required scheduled maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Record keeping for operational and QC procedures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Operates instrumentation properly and accurately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. Discuss common troubleshooting techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
4. Perform a CBC using the primary instrumentation in the department within the laboratory's published turnaround time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
5. Correctly interpret and discuss analyzer histograms/scatterplots relative to RBC's, WBC's, and platelets, confirming the interpretation with a microscopic study of the stained smear, in agreement with the supervising technologist/technician.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
6. Recognize hematology results in the critical range, as flagged by the LIS, and follow through according to lab policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
7. Recognize and discuss normal and abnormal RDW's as reported by the analyzer, correlating result with slide review.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>8. Manual Differentials</b>										

Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
a. Prepare and stain peripheral blood smears, demonstrating good cell distribution and staining of red cells, white cells, and platelets, comparable to those of the supervising technologist/technician.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform a MINIMUM of 20 normal manual differential counts on properly prepared and stained smears of normal peripheral blood, agreeing with the clinical instructor within +/- 20% and performed within acceptable time limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform a MINIMUM of 20 manual differentials on abnormal blood smears, seeking assistance as necessary and agreeing with the clinical instructor within +/- 20%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Recognize and name the following abnormal cells, as found in current patient smears or archived slides: Nucleated Red Cells, Atypical Lymphocytes, Immature granulocytes, Blasts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Report cell morphology evaluation on current patient smears or archived slides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Correlate the Red Cell Indices with the stained smear in terms of hypochromia, microcytosis, and macrocytosis, as above.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
9. State the significance of abnormal or unexpected hematology results on all tests performed when questioned orally by the supervising technologist/technician.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
10. State the clinical significance of abnormal results obtained, correlating patient results as to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
11. Accurately set up and read Erythrocyte Sedimentation Rates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>12. Body Fluid Analysis</b>										

Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
a. Perform cell count on CSF, or other body fluid, using written procedure for dilution and calculation with results being within +/- 20%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform differential WBC count on concentrated CSF, or other body fluid with results being within +/- 20%.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Correctly evaluates gross appearance and color including xanthochromia, if relevant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Performs cell counts within +/- 20% of the instructors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Accurately performs dilutions as necessary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Accurately calculates results on diluted samples.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Completes differentials with 90% accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. Discuss the type and significance of crystals found in synovial fluid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
i. Discuss the process for referral to pathologist for review.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>13. Optional Miscellaneous Procedures – perform if available at the clinical site.</b>										
j. Manual Reticulocyte Count – Prepares sample with staining solution and a readable smear.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
k. Manual Reticulocyte Count – Performs the reticulocyte count with values within +/- 20% of the instructors and reports out results using appropriate units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
l. Bone Marrow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
m. Malarial Smear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
n. Sickle Cell Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
o. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
p. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Additional Comments:

## Coagulation Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

**Instructions:**

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. **If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.**

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
a. Place to securely store belongings		
b. Location of restroom		
c. Location of break room		
d. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		
ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
d. Incident Reports		

**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_

Department: **COAGULATION**

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
<b>1. Specimen Processing</b>										
a. Correctly identifies patient samples and prioritizes samples based on urgency of test request.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. State the sample types acceptable for each test performed in the coagulation department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. States the reason for rejection of samples according to department protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>2. Quality Control</b>										
a. Reviews QC and preventive maintenance procedure for each coagulation analyzer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Prepares and labels reagents, calibrators, standards and controls in accordance with manufacturer's directions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Verifies that quality control results are within <u>+2</u> standard deviations of pre-determined limits, using Westgard rules for interpretation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Takes corrective action for controls that do not meet predetermined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>3. Coagulation Analyzer Operation</b>										

Skill/Competency	Method			Complete			Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
a. Read/discuss principle of the instrument operation or test procedure reaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Performs daily maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Performs coagulation testing by operating instrumentation properly and accurately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Apply normal ranges utilized by the department to correctly interpret patient results as normal or abnormal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Brings abnormal results to the attention of the clinical instructor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Recognize coagulation results in critical range, according to laboratory's published list of critical values, and follow through accordingly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. State the clinical significance of abnormal results obtained, correlating patient results as to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>4. OPTIONAL TESTS PERFORMED</b>										
a. D-Dimer/ Fibrin Degradation Products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Mixing study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Factor Assays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Perform testing for Low-Molecular-Weight Heparin therapy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Perform platelet function assay,	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Perform platelet inhibition (Plavix, ASA) testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. OTHER:										
h. OTHER:										
i. OTHER:										

Additional Comments:

## Microbiology Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

**Instructions:**

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. **If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.**

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
a. Place to securely store belongings		
b. Location of restroom		
c. Location of break room		
d. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		
ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
e. Incident Reports		



**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_

Department: **MICROBIOLOGY**

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

MICROBIOLOGY Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
<b>1. Specimen Processing</b>										
a. Prioritizes samples based on urgency of test requests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Correctly identifies source identification and proper labeling with 100% accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. State the sample types acceptable for each test performed in the microbiology department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. States the reason for rejection of samples according to department protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Correct handling of patient samples, taking into consideration the age, integrity and source of specimen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Correctly inoculates and streaks clinical material, using department protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Correctly incubates culture media under proper atmospheric conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>2. Quality Control</b>										
a. Evaluates reagents and controls for suitability including out-dating and appearance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

MICROBIOLOGY Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
b. Prepares reagents and controls in accordance with manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Labels controls appropriately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Properly records and stores QC values according to laboratory protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Takes corrective action for controls that do not meet predetermined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Participates in comparison/correlation studies to bring in a new lot numbers of control, media and/or reagents into service. If applicable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>3. Instrumentation</b>										
<b>a. Blood culture analysis</b>										
i. Discuss the methodology of the blood culture instrument.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
ii. Perform necessary maintenance procedures (daily, routine, backup).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iii. Load/Unload blood culture bottles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iv. Recognizes "panic/critical values" and states action which must be taken when such a value is obtained on a patient sample.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
v. State the clinical significance of abnormal results obtained, correlating patient results to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>b. Identification &amp; Sensitivity Systems</b>										
i. Discuss the methodology of the instrument performing ID & sensitivity (i.e., VITEK, Microscan).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
ii. Perform necessary maintenance procedures (daily, routine, backup).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iii. Correctly set-up ID & sensitivity panels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

MICROBIOLOGY Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
iv. Interpret results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
v. Recognize results that fall outside of expected scope and will trouble shoot these problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
vi. Recognize “panic/critical values” and states action which must be taken when such a value is obtained on a patient sample.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
vii. State the clinical significance of abnormal results obtained, correlating patient results to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>4. Miscellaneous tests performed – NOTE not all sites will perform all procedures listed below. Please be sure to check the appropriate column on the right.</b>	<b>If any of the following are NOT performed at your site write “NA” in the comments column.</b>									
a. Catalase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Coagulase or Staph typing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Bacitracin sensitivity or Strep typing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Optochin sensitivity or Strep typing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Oxidase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. X and V factor requirements/ Quad plates for Haemophilus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Cast test and /or Germ tube	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. API and or NHI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
i. PYR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
j. Beta lactamase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
k. Wet mounts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
l. KOH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
m. MRSA Screen Protocol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
n. Microdase disc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
o. Catarrhalis disc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
p. Shigella typing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>5. Blood cultures</b>										
a. Participate in the visual inspection of blood cultures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

MICROBIOLOGY Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
b. Subculture and gram stain positive blood cultures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform appropriate tests to identify pathogenic organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Appropriately report positive blood cultures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>6. Respiratory Tract</b>										
a. Participate in reading cultures from throat and sputum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform appropriate tests to identify pathogenic organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Distinguish normal flora from pathogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>7. Gastrointestinal Tract</b>										
a. Participate in reading cultures from the gastrointestinal tract.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform appropriate tests to identify pathogenic organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Distinguish normal flora from pathogens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>8. Urogenital Tract</b>										
a. Participate in reading cultures from the urogenital tract.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform appropriate tests to identify pathogenic organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Distinguish normal flora from pathogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>9. Miscellaneous sites</b>										
a. Participate in reading cultures from CSF, body fluid and wounds.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform appropriate tests to identify pathogenic organisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Distinguish normal flora from pathogens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>10. Gram stain</b> – Perform 20 gram stains with results matching those of the clinical instructor. NOTE: Each bench performs gram stains. This competency will be checked off once a TOTAL of 20 are accurately performed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>11. Sensitivity testing</b>										
a. Kirby Bauer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. MIC sensitivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. E-test	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>12. Reporting of Results</b>										

MICROBIOLOGY Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
a. Properly identifies results with critical (panic) ranges and acts upon those results accordingly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Uses appropriate nomenclature when reporting results.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Correlates patient results as to possible disease or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Report any notifiable conditions to the Health Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. State the clinical significance of abnormal results obtained, correlating patient results as to possible disease and/or therapy states.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>13. Unknown Specimens</b>										
a. Perform testing on unknown specimens.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Properly identify unknown specimens given to the student for identification.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>14. OPTIONAL – Student will perform the following procedures if available.</b>										
<b>a. Parasitology</b>										
i. Prepare specimens for parasitic examination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
ii. Accurately examine pinworm preparations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iii. Participate in the reading of parasitic preparations for parasites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iv. Practice identification of parasites using reference slides.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>b. Mycology</b>										
i. Process clinical material for the culturing and identification of yeasts and fungus, as available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
ii. Perform microscopic examinations on clinical materials for the presence of fungus or yeast, as available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iii. Perform testing procedures used in the identification of yeast and fungus, as available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>c. Mycobacteria</b>										

MICROBIOLOGY Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
i. Process clinical material for the culturing of <u>Mycobacterium</u> , as available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
ii. Perform and interpret acid fast or fluorescent staining.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
iii. Identify mycobacteria.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

## Blood Bank Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

### Instructions:

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. **If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.**

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
a. Place to securely store belongings		
b. Location of restroom		
c. Location of break room		
d. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		
ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
f. Incident Reports		

**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_

Department: **BLOOD BANK**

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Blood Bank Skill/Competency	Method			Complete			Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
<b>1. Specimen Processing</b>										
a. Prioritizes samples based on urgency of test requests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Correctly identifies patient sample.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. States the reason for rejection of samples according to department protocol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. State the sample types acceptable, i.e., EDTA, Clot, for each test performed in the clinical chemistry department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Evaluates samples for suitability for use: additive, QNS, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Identifies pre-analytical errors which will interfere with specific tests, i.e., hemolysis, lipemia, icterus, incorrect tube additive, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Stores samples at appropriate conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>2. Quality Control</b>										
a. Performs routine daily quality control on blood bank reagents according to manufacturer's instruction with 95% accuracy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Refrigerator(s) and freezer(s), i.e., temperatures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Performs other reagent QC according to manufacturer's instructions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			



Blood Bank Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
d. Verifies that quality control results are within set limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Reviews QC and preventive maintenance procedure for cell washer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Reviews QC and preventive maintenance procedure for heat blocks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Reviews QC and preventive maintenance procedure for refrigerators.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. Reviews QC and preventive maintenance procedure for freezers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
i. Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>3. Blood Bank stock and components.</b>										
a. States recommended storage temperature for each component.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. States expiration time for each component.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Discuss stock levels of components required at site.										
d. Demonstrate process for bringing in stock supplied by blood provider. This can be a “mock” demonstration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>4. Issuing Blood</b>										
a. States the evaluation of component appearance and reason for rejection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. States the information which must appear on a unit of blood prior to issue.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Observes blood being issued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. OPTIONAL: Observes the beginning of a transfusion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>5. ABO/D Typing – minimum of 14 samples as part of T&amp;S and XM with 95% accuracy.</b>										
a. Correctly perform ABO/D typing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Records interpretation of reactions obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. State the most commonly encountered ABO discrepancies with resolutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Blood Bank Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
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e. State the work up required, including lectin used, for an A <sub>2</sub> with anti-A <sub>1</sub> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>6. Antibody Screen - minimum of 8 samples as part of T&amp;S and XM with 95% accuracy.</b>										
a. Accurately records patient name and number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform Antibody Screen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Records interpretation of reactions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. States additional testing to perform when antibody screen is positive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>7. Crossmatch - minimum of 6 samples- as part of total XM procedure with 95% accuracy.</b>										
a. Records patient name and number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform major crossmatch, immediate spin.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform major crossmatch, AHG.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Records interpretation of reactions obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. State selection of ABO/D compatible blood when blood type not available OR special circumstances arise, i.e., antibodies present.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>8. Direct Coombs on Cord Bloods- minimum 4 with 95% accuracy.</b>										
a. Records patient name and number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform DAT.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Records interpretation of reactions obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Determines RhIg candidacy for D negative mothers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Accurately reports out the results obtained according to laboratory protocol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. OPTIONAL: Perform one elution procedure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>9. OPTIONAL: Transfusion of Neonates – Discussion only 95% accuracy required</b>										
a. States ABO/D type for routine transfusion of the infant.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. States the appropriate ABO/D type for exchange transfusion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Blood Bank Skill/Competency	Method			Complete			Re-evaluation			Comments/Improvement Plan
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c. State the three types of HDN and the antibody specificities involved.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. State the special considerations for transfusing neonates, i.e., CMV, irradiation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>10. Rh Immune Globulin Work Up -minimum of 2 with 95% accuracy.</b>										
a. Records patient name and number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform Antibody Screen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Perform Fetal Bleed Screen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Records interpretation of reactions obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Discuss Kleihauer-Betke acid elution stain.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Given the results of a KB determine the number of vials of RhIg needed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>11. Antibody ID (minimum of 2) with 95% accuracy</b>										
a. Records patient name and number.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Perform Panel Study. Can also do case study panels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Record results as reactions are read.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Records interpretation of reactions obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Identifies primary antibody specificity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Rules out all other antibody specificities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Performs additional antigen typing, if available. Includes selection of appropriate controls for typing sera used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. States the clinical significance of blood group antibodies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
i. Lists and states the antibody class, phase of reactivity, clinical significance and transfusion requirements: Rh, Jk, K, Fy, M, N, S, Le, P1, and I.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
j. Lists special testing which may be performed, i.e., ficin, neutralization, auto-absorptions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>12. OPTIONAL</b>										
a. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Blood Bank Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
b. OTHER:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Additional Comments:

## Clinical Chemistry Rotation Orientation

STUDENT NAME: \_\_\_\_\_

CLINICAL INSTRUCTOR & AFFILIATE: \_\_\_\_\_

### Instructions:

1. The clinical instructor(s) must document the student's orientation to the laboratory by placing the date and initials of the individual responsible in the appropriate column.
2. **If the student is performing multiple rotations at the same clinical site and the orientation has already been performed check the “No” box below.**

	YES	NO – Orientation done during previous rotation.	Clinical Instructor Initials
Student needs orientation to clinical site:	<input type="checkbox"/>	<input type="checkbox"/>	

ORIENTATION TO CLINICAL SITE	Date	Instructor
1. Shown location of the following:		
a. Place to securely store belongings		
b. Location of restroom		
c. Location of break room		
d. Location of cafeteria		
2. Short tour of laboratory facility		
3. Introduction to laboratory manager		
4. Introduction to key staff in the department		
5. Location of department Procedure Manual		
ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL	Date	Instructor
1. IDENTIFIES LOCATION OF SAFETY DEVICES		
a. Fire Extinguishers		
b. Fire Alarms		
d. Eye Washes		
e. Safety Showers		
f. First Aid Kit		
g. Emergency Exits		
2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD & BODY FLUIDS AND EXPOSURE PROTOCOLS		
a. Exposure Protocol		
g. Incident Reports		

**Michigan Technological University  
Medical Laboratory Science Program  
Assessment of Competencies**

Student (PRINT): \_\_\_\_\_

Department: **CLINICAL CHEMISTRY**

**Method:** D=Demonstration O=Observed P = Perform

**Evaluation:** S=Satisfactory NS=Not Satisfactory-Need Re-evaluation

Student Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Supervisors Signature \_\_\_\_\_

Completed Date: \_\_\_\_\_

Clinical Chemistry Skill/Competency	Method			Complete			Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
<b>1. Specimen Processing</b>										
c. Prioritizes samples based on urgency of test requests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Correctly identifies patient sample.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. States the reason for rejection of samples according to department protocol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. State the sample types acceptable, i.e., EDTA, Clot, for each test performed in the clinical chemistry department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Evaluates samples for suitability for use: additive, QNS, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. Identifies pre-analytical errors which will interfere with specific tests, i.e., hemolysis, lipemia, icterus, incorrect tube additive, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
i. Separates serum or plasma in an appropriate manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
j. Properly prepares specimens for shipment to reference laboratories.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
k. Labels transfer tubes completely and accurately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
l. Stores samples at appropriate conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
m. OPTIONAL: Labels and prepares container for 24-hour urine collection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Clinical Chemistry Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	
<b>2. Quality Control</b>									
a. Discuss QC and preventive maintenance procedure for centrifuges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
b. Reviews QC and preventive maintenance procedure for refrigerators.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
c. States corrective action to take when refrigerators temperatures exceed predetermined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
d. Reviews QC and preventive maintenance procedure for each chemistry analyzer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
e. Evaluates reagents, calibrators, standards and controls for suitability: out-dating, appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
f. Select the correct pipette for reagent and sample preparation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
g. Prepares reagents, calibrators, standards and controls in accordance with manufacturer's directions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
h. Analyzes control reagent according to manufacturer's instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
i. Verifies that quality control results are within <u>+2</u> standard deviations of pre-determined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
j. Takes corrective action for controls that do not meet predetermined limits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
k. Performs correlation studies to bring new lot numbers of control and/or reagents into service. (If applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
l. Performs linearity studies of equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
m. Uses Westguard rules to evaluate control values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
n. Evaluates Levy-Jennings charts for shifts and trends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
<b>3. Laboratory Calculations</b>									
a. Accurately performs dilutions using appropriate ratios and proper diluting fluid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
b. Accurately performs creatinine clearance calculation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
<b>4. Chemistry Analyzer Operations - GENERAL</b>									

Clinical Chemistry Skill/Competency	Method			Complete		Re-evaluation			Comments/Improvement Plan	
	D	O	P	S	Date	Int.	NS	Date		Int.
a. States principle of the instrument operation or test procedure reaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Startup procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Daily maintenance required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Other required scheduled maintenance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Record keeping for operational and QC procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Routine instrument operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Troubleshooting techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>5. Chemistry Analyzer Operations – Correctly operates automated chemistry analyzers obtaining reportable results.</b>										
a. Make/model of analyzer used:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Make/model of analyzer used:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Make/model of analyzer used:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>6. Testing</b>										
a. Selects and prepares appropriate samples for testing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Determines concentration of unknown samples.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Report results using appropriate units.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
<b>7. Evaluation of Results Obtained</b>										
a. Identify results out of instrument sensitivity range.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Appropriately acts on out of range results by reporting to preceptor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Interpret results as to normal or abnormal based on normal values utilized by clinical site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Correlates clinical significance of abnormal results obtained to possible disease conditions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. States additional tests to perform when abnormal results are obtained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Recognizes critical (panic) values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Appropriately acts on critical values by reporting to preceptor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			



Clinical Chemistry Skill/Competency	Method				Complete		Re-evaluation			Comments/Improvement Plan
	D	O	P	S	Date	Int.	NS	Date	Int.	
8. <b>OPTIONAL</b> - Special Chemistry – If any of the following testing is available the student should observe or perform the procedure.										
a. Nephelometry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
b. Turbidometry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
c. Chromatography	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
d. Electrophoresis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
e. Immunodiffusion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
f. Osmometry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
g. Chemluminescence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
h. EIA										
i. Other (Identify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			
j. Other (Identify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>			

Additional Comments: