2024

Student Handbook

Bachelor of Science in Medical Laboratory Science

Division of Clinical Laboratory Science | Vera Z. Dwyer College of Health Sciences

Table of Contents

Welcome from the Vera Z. Dwyer College of Health Sciences Dean

Welcome!

It is an honor to welcome you to the Medical Laboratory Sciences program in the Dwyer College of Health Sciences as you enter the health professions. Today marks a new beginning with new challenges and opportunities; make today the beginning of a path to a better you!

Graduates of our program serve the Michiana region, the rest of Indiana, the Midwest, and beyond. The Medical Laboratory Sciences program is establishing itself as a prime program graduating first rate professionals. A strong indication that you are surrounded by people who care about you is the fact that some of our faculty members are alumni of this program. You have the opportunity to reach your full potential with your daily investment in coursework and clinical practices together with our commitment to working with you. Each day may bring new challenges that will help you grow; make each day count!

As you progress in the program, you will make new friends while developing into a new health professional. We are confident you will always serve the community and your clients in a professional, respectful, and ethical manner.

We hope that you will find a lot of useful information in this handbook and that it answers most of your questions. Additionally, we encourage you to reach out to the faculty in the program and other individuals across campus if you need further support and/or resources.

Welcome again and congratulations on becoming part of the Medical Laboratory Sciences program and the Titan family at IU South Bend.

Jesús García-Martínez, MD, MSc, PhD, FASAHP
Dean, Vera Z. Dwyer College of Health Sciences
Professor of Health and Rehabilitation Sciences
Indiana University South Bend

Chapter 1: Introduction to the Division of Clinical Laboratory Science

Introduction

Welcome to the Division of Clinical Laboratory Science at Indiana University South Bend. The Division of Clinical Laboratory Science is part of the School of Applied Health Sciences, within the Vera Z. Dwyer College of Health Sciences. We are pleased that you have chosen to pursue your education in laboratory diagnostics with us! The faculty and staff of the Medical Laboratory Science program look forward to working with you and wish you much success in the pursuit of your educational goals.

To help you successfully achieve your goals we have created this handbook as a guide to the academic program requirements for the Bachelor of Science in Medical Laboratory Science. It is also used to convey information related to Division structure and philosophy, provide support for student success, and provide structure and alignment for decision making. This handbook has been constructed as a supplement to the Indiana University Code of Students Rights, Responsibilities, and Conduct and serves to bridge the overriding policies of the University with the policies of the Division of Clinical Laboratory Science. The policies and procedures outlined in this handbook are here to support your successful progress through the Medical Laboratory Science program. Students are responsible for all information in this handbook and should become familiar with its content. This handbook should serve as a resource during your time in the Medical Laboratory Science program. Please note that where the policy of a School/Program is more restrictive than those of the University, students are held to the more restrictive policy. **While every effort is made to provide accurate and current information, Indiana University South Bend and Indiana University reserve the right to change, without notice, guidelines, procedures, programs, and other matters when circumstances dictate.**

The Medical Laboratory Profession

The Medical Laboratory Scientist (MLS), also known as a Clinical Laboratory Scientist, is an integral member of the patient care team, providing diagnostic information required to identify, treat, and monitor illness in patients. Formerly known as a Medical Technologist, the MLS has an aptitude for science, especially biology and chemistry, and appreciates the investigative and technical aspects of laboratory medicine. Laboratory professionals are devoted to detection and diagnosis through the analysis of blood, body fluids, and tissue. An MLS will perform hundreds of laboratory tests, for which the results are used by physicians to diagnose disease, identify the most appropriate medication and dosage, and monitor the response to treatment.

In a laboratory, a Medical Laboratory Scientist may work in a variety of areas including clinical chemistry, hematology, immunology, microbiology, and the blood bank. In clinical chemistry, tests are often performed on blood and other body fluids to determine the patient's levels of various enzymes, proteins, and hormones. Variation in

these analytes is diagnostic of disease such as diabetes, cardiac abnormalities, and even organ failure. In hematology, blood is examined for indicators of inflammation and infection, as well as cancers such as lymphoma and leukemia. Blood is also tested for its ability or inability to clot appropriately, referred to as hemostasis. Diagnostic testing in immunology is often centered on infectious diseases, through the identification of the infecting agent or antibodies produced in the presence of such agent. The antibodies involved in autoimmune diseases, such as lupus and arthritis, are also identified in immunology. In microbiology, body fluids, tissues, and other biological specimens are examined and tested to identify microorganisms causing disease and determine effective treatment options. Microbiology testing examines bacterial, viral, fungal, and parasitic agents causing disease in humans. The blood bank may be one of the most critical areas for the health of a patient. Not only does the blood bank perform simple tests, such as determining a patient's blood type, the blood bank is also responsible for transfusion medicine, ensuring blood given to a patient is compatible and will not cause harm.

While the focus of the Bachelor of Science in Medical Laboratory Science program is the knowledge and skills needed to successfully work as a Medical Laboratory Scientist in a hospital or reference laboratory, there are a variety of career options available to individuals holding a Bachelor of Science in Medical Laboratory Science. Such aspirations include, but are not limited to, infection control, epidemiology, research, biotechnology, forensics, informatics, healthcare industry, healthcare administration, and professional services. Laboratory professionals may also seek advanced degrees, such as a Master of Science in Clinical/Medical Laboratory Science, clinical doctorate in Clinical Laboratory Science (DCLS), or even attend medical school.

Dedication to Non-discrimination and Equal Opportunity

Indiana University and the Division of Clinical Laboratory Science are committed to the achievement of equal opportunity within the University and throughout American society. In this regard, Indiana University and the Division of Clinical Laboratory Science will recruit, hire, promote, educate, and provide services to persons based upon their individual qualifications. Indiana University prohibits discrimination based on age, color, disability, ethnicity, sex, gender identify, gender expression, genetic information, marital status, national origin, race, religion, sexual orientation, or veteran status. Indiana University does not discriminate based on sex in is educational programs and activities, including employment and admission. Questions specific to Title IX may be referred to the Office of Civil Rights or the University Title IX Coordinator. See University Policy UA-01 for more information.

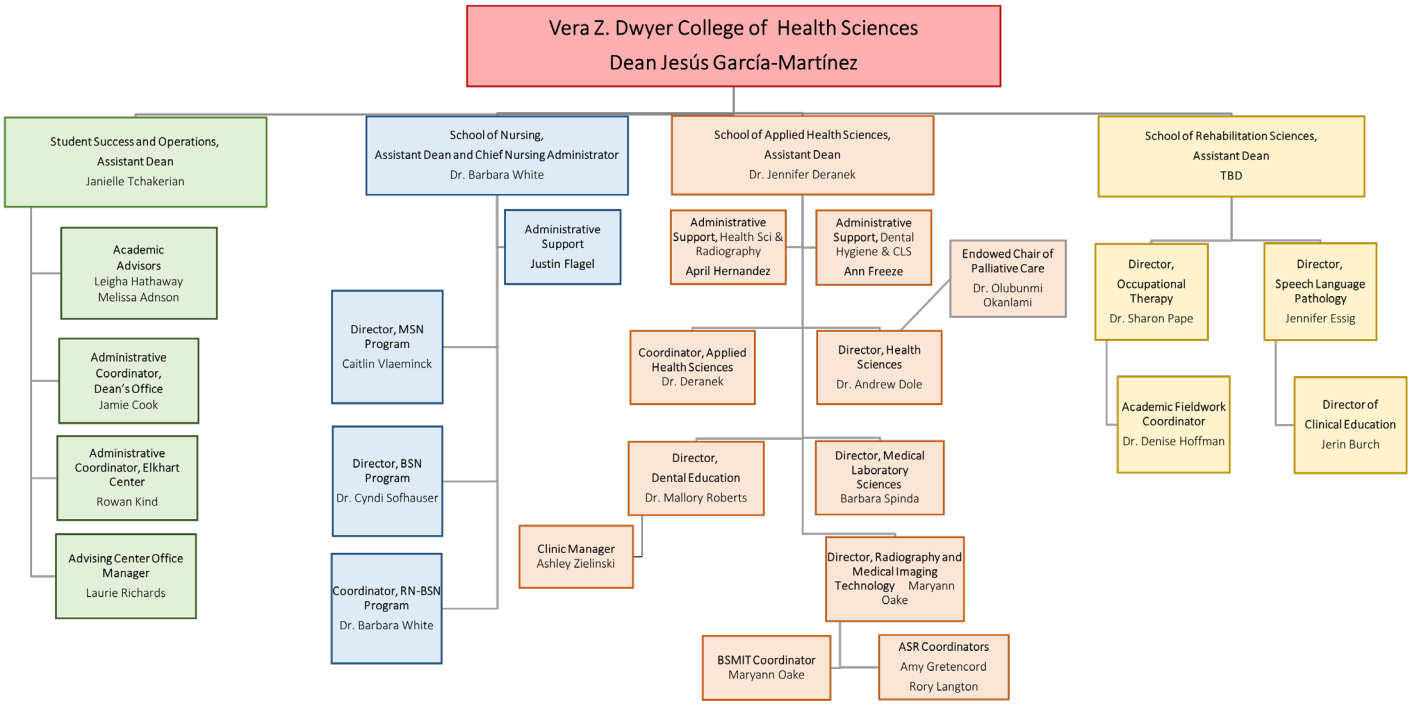
Dedication to Diversity, Equity, Inclusion, and Belonging

The Division of Clinical Laboratory Science advances diversity, equity, inclusion, and belonging through the program by partnering with faculty, staff, and students. We model our shared values through our daily practices and programs. Specific efforts include student recruitment, admission, retention, and student success initiatives, and working with community and campus stakeholders. Our individual social, economic,

and cultural identities shape and influence our experiences and perspectives. We recognize that our diverse population comes with unique lived experiences and various perspectives that provide our faculty, staff, students, and stakeholders with valuable opportunities and "teachable" moments to be the best versions of ourselves and give the best services to the community. We will continue to engage in meaningful ways to learn from each other so that all feel valued, seen, included, and a sense of belonging within our program and profession.

Organizational Structure

An organizational structure provides a framework for how work and responsibility flow through a group to accomplish a common goal or outcome. The Vera Z. Dwyer College of Health Sciences is situated within the IU South Bend campus, which is part of the larger Indiana University system. The organizational chart below provides a visual of how the college is structured. The Dean is the highest administrator within the college. Roles and responsibilities are delegated to the Assistant Deans and further divided as depicted in the chart. Faculty, staff, volunteers, and students of each program unit are not listed.



Vera. Z. Dwyer College of Health Sciences

The Vera Z. Dwyer Vision and Mission statements provide inspiration and direction for the day-to-day operations of the college. The vision outlines the shared desired future of the college. The mission statement defines the core work of the college, the motivations for operating, and outlines the shared approach to achieving the vision for the college. Both the vision and mission statements form the basis of the 2023 Strategic Plan of the Vera Z. Dwyer College of Health Sciences.

Vera. Z. Dwyer College of Health Sciences Mission

The Vera Z. Dwyer College of Health Sciences, in collaboration with the community, fosters the education and development of healthcare professionals who address the current, diverse, and evolving health and wellness needs of the people in our region, state, and beyond.

Vera. Z. Dwyer College of Health Sciences Vision

The Vera Z. Dwyer College of Health Sciences will be recognized as a community collaborator offering flexible, high quality, evidence-based, interprofessional healthcare education.

The Division of Clinical Laboratory Science

The Division of Clinical Laboratory Science has been developed in accordance with the mission, vision, and values of Indiana University, Indiana University South Bend, and the Vera Z. Dwyer College of Health Sciences. In addition, the Bachelor of Science in Medical Laboratory Sciences was designed to meet the standards set by the National Accrediting Agency for Clinical Laboratory Science (NAACLS).

Philosophy of the Division of Clinical Laboratory Science

The faculty and staff of the Division of Clinical Laboratory Science believe that laboratory professionals are an integral member of the healthcare team, providing critical information for the accurate diagnosis, treatment, and monitoring of the health of society. The curriculum is built upon the belief that authentic and active learning experiences are the most beneficial for students to apply their knowledge as effective laboratory professionals. Laboratory courses are designed to mirror didactic content with the ability to provide students with in-house, hands-on practical application in a student laboratory space that allows for practice and repetition.

The Division of Clinical Laboratory Science also recognizes the importance of partnering with regional laboratories for students to gain authentic learning in a clinical laboratory setting. Students complete clinical rotations, focusing on departments individually, to experience the day-to-day activities of a Medical Laboratory Scientist. Although not guaranteed, the Division of Clinical Laboratory Science strives to place students in clinical rotation experiences that will offer employment after graduation and supply professionals into the clinical laboratory community.

Division of Clinical Laboratory Science Mission Statement

The Division of Clinical Laboratory Science within the Vera Z. Dwyer College of Health Sciences is committed to educating healthcare professionals with skills in clinical, diagnostic, and therapeutic laboratory operations. The Division focuses on developing authentic and collaborative education experiences that are diverse and inclusive to support interprofessional practice and encourages life-long learning.

Bachelor of Science in Medical Laboratory Science Mission Statement

The Bachelor of Science in Medical Laboratory Science strives for educational excellence in the field of laboratory medicine through engaging students with active

and authentic learning experiences. Graduates with a Bachelor of Science in Medical Laboratory Science will increase the vitality of the economy as important members of the healthcare community.

Bachelor of Science in Medical Laboratory Science Vision Statement

The Bachelor of Science in Medical Laboratory Science program seeks to be recognized as the best source for well-educated Medical Laboratory Scientists in the region.

Division of Clinical Laboratory Science Faculty and Staff

Program Director

Barbara Spinda, MS, MLS(ASCP)^{CM} SM^{CM}
Associate Clinical Professor
Dwyer Hall, 157
(574) 520-4568
bspinda@iu.edu

Visiting Full-time Faculty

Kim Kibby, MSA, CIC, MLS(ASCP)^{CM}, SM^{CM}, SC^{CM}, SH^{CM}, PBT(ASCP)^{CM}
Visiting Assistant Clinical Professor
Dwyer Hall, 158
(574) 520-4601
kiskibby@iu.edu

Adjunct Faculty

Brandy Sreenilayam, PhD (2018)
Nongkhan Sites, MLS(ASCP)^{CM} (2018 to 2019)
Jonathan Fuchs, MS, MLS(ASCP)^{CM} SBB^{CM} (2019 to 2021)
Kristi Walker, MS, MLS(ASCP)^{CM} (2019 to 2020)
Derrick Forchetti, MD (2019 to 2021)
Karen Delle Donne, PhD (2020 to 2021)
Molly Feller, MLS(ASCP)^{CM} (2020 to 2021)
Leigh Ann Hooley, BS (2021)
Rebecca Wooster, BS (2021 to current)
Diana Young, MS (2021 to current)
Kim Kibby, MSA, CIC, MLS(ASCP)^{CM}, SM^{CM}, SC^{CM}, SH^{CM}, PBT(ASCP)^{CM} (2023 to current)
Meagan Curley, MBA, MLS(ASCP)^{CM} (2022)

Faculty In Memoriam

Ian Clift, PhD, MLS(ASCP)^{CM} (2015 to 2023)

Administrative Support

Ann Freeze Education Arts, 1250
(574) 520-4158
akfreeze@iu.edu

Assistant Dean of the School of Applied Health Sciences
Jenny Deranek, PhD, LAT, ATC Northside Hall, 456C
(574) 520-4660
jenderan@iu.edu

Dean of the Vera Z. Dwyer College of Health Sciences
Jesús García-Martínez, MD, MSc, PhD, FASAHP
Northside Hall, 460
(574) 520-5511
jgarmar@iu.edu

Division of Clinical Laboratory Science Advisory Board

Members of the regional laboratory science community and affiliated community health organizations contribute to the Indiana University South Bend Clinical Laboratory Science Advisory Board. The purpose of this advisory board is to connect the Clinical Laboratory Science faculty, staff, and students at Indiana University South Bend with valuable individuals and companies throughout the community. The charge of the advisory board is to provide input into the curriculum and to determine if the curriculum is relevant to the needs of the laboratory community and effective at producing medical laboratory professionals. This board meets at least annually at the Indiana University South Bend campus.

Current members include:

- Gina Arsenault, MS, MLS(ASCP), Laboratory Director, Memorial Hospital
- Michelle BonDurant, MT(ASCP) SBB^{CM}, Laboratory Director, Elkhart General Hospital
- Shareen Lee, Associate Director of Operations, LabCorp
- Leah Powell, MT(AMT), Laboratory Supervisor, Community Hospital of Bremen
- Susan Richeson, MJ, BSMT(ASCP), Administrative Director, St. Joseph Regional Medical Center – Mishawaka and Plymouth
- Jamie Starbuck, MBA, BS, M(ASCP), Spectrum Lakeland Health
- Jennifer Ulrich, MT(ASCP)^{CM}, Blood Bank Lead, La Porte Hospital
- Mary F. Youngs, MPA, MT(ASCP), Blood Bank Manager, South Bend Medical Foundation

NAACLS Accreditation

The Bachelor of Science in Medical Laboratory Science at Indiana University South Bend is an accredited Medical Laboratory Science academic program by the National Accrediting Agency of Clinical Laboratory Science (NAACLS).

For more information on the NAACLS accreditation process please visit the NAACLS webpage.

National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
5600 N. River Road, Suite 720
Rosemont, IL, 60018

Medical Laboratory Scientist Certification

Receipt of a Bachelor of Science in Medical Laboratory Science is not contingent upon students taking and/or passing any certification or licensure examination. However, graduates of this program are eligible and encouraged to take the Medical Laboratory Scientist certification examination given by the American Society of Clinical Pathology (ASCP) Board of Certification (BOC) through route 1. Upon passing this examination, individuals become nationally certified as a Medical Laboratory Scientist, MLS(ASCP)^{CM}.

Alternatively, graduates are eligible to take the Medical Laboratory Scientist certification examination given by American Medical Technology (AMT). Upon passing this examination, individuals become certified as a Medical Laboratory Scientist, MLS(AMT).

State Licensure Requirements

Some states require Medical Laboratory Scientists to be licensed in that state to work in medical or clinical laboratories. Indiana does not license Medical Laboratory Scientists. The Medical Laboratory Science program at Indiana University South Bend satisfies requirements for certification by the American Society for Clinical Pathology Board of Certification (ASCP BOC) and complies with the standards of accreditation established by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) but may not satisfy the licensing requirements for some states. In particular, our program may not satisfy the requirement for clinical training set by the states of New York and California.

Students who intend on moving to a state that has licensure after completion of this program are encouraged to check with the requirements for state licensure and communicate with the Program Director before starting the program to make sure that the Indiana University South Bend curriculum will satisfy the requirements for licensure in that state.

Medical Laboratory Science Teaching Facilities

The Medical Laboratory Science program at Indiana University South Bend is housed in Vera Z. Dwyer Hall on the Indiana University South Bend campus. Dwyer Hall was remodeled in 2017 for the purpose of housing the Indiana University South Bend Student Health and Wellness Center, the offices of the federally qualified community health partner HealthLinc, and the academic programs in Medical Laboratory Science and Radiography. The radiography program has since relocated to another space on campus and the Student Health and Wellness Center has closed. The Medical Laboratory Science Program utilizes a dedicated classroom and student laboratory spaces that includes numerous instruments, equipment, and supplies to support hands-on learning of diagnostic techniques and methods.

Clinical Affiliation Facilities

Students enrolled in the Bachelor of Science in Medical Laboratory Science program attend clinical externship rotations prior to graduation for active learning, hands-on experiences. Clinical affiliation agreements are in place with the following clinical facilities.

Memorial Hospital 615 N. Michigan Street South Bend, IN 46601 Gina Arsenault, MS, MLS(ASCP)	St. Joseph Regional Medical Center 5215 Holy Cross Parkway Mishawaka, IN 46545 Susan Richeson, MJ, BSMT(ASCP)
Elkhart General Hospital 600 East Boulevard Elkhart, IN 46514 Michelle BonDurant, MT(ASCP) SBB[CM]	St. Joseph Regional Medical Center 1915 Lake Avenue Plymouth, IN 46563 Susan Richeson, MJ, BSMT(ASCP)
Community Hospital of Bremen 1020 High Road Bremen, IN 46506 Leah Powell, MT(AMT)	LabCorp 3575 Moreau Court South Bend, IN 46628 Lynette Smith, MLT(ASCP)
Beacon Medical Group 900 I Street La Porte, IN 46350 Leah Powell, MT(AMT)	Logansport Memorial Hospital 1101 Michigan Avenue Logansport, IN 46947 Julee Looker, MLS(ASCP), CHTS-PW
South Bend Medical Foundation 530 N. Lafayette Boulevard South Bend, IN 46601 Joyce Peterson-Miller, MT(ASCP)	Northwest Health – La Porte 1331 State Street La Porte, IN 46350 Jennifer Ulrich, MT(ASCP)[CM]
Spectrum Lakeland Health 1234 Napier Avenue St. Joseph, MI 49085 Jamie Starbuck, MBA, BS, M(ASCP)	South Bend Clinic 1945 Lincolnway East South Bend, IN 46615 Everett Barker, BS, MT(ASCP)
Dukes Memorial Hospital 275 W. 12th Street Peru, IN 46970 Jordan Phillips, HT(ASCP)	Woodlawn Hospital 1400 E 9th Street Rochester, IN 46975 Emily Schouten, MS, MLS(ASCP)[CM]
Kosciusko Community Hospital 2101 E. Dubois Drive Warsaw, IN 46580 Pam Arvesen, BS, MT(ASCP)	Jackie Walorski VA Clinic 1540 Trinity Place Mishawaka, IN 46545 Katey Dulin, MT(AMT)
Fort Wayne VA Medical Center 2121 Lake Avenue Fort Wayne, IN 46805 Rebecca McGauley, MBA, MLS(ASCP)[CM]	

Chapter 2: Program Admission and Progression

Application Process

Students seeking admission to the Bachelor of Science in Medical Laboratory Science program should first apply and be accepted into Indiana University South Bend. Resources for applying to Indiana University South Bend may be found on the Admissions webpage. There are multiple routes in which a student may seek admission into the Bachelor of Science in Medical Laboratory Science program. The route taken is dependent on the academic experience of the applicant.

For the purpose of admission and progression, the Bachelor of Science in Medical Laboratory Science degree is divided into two sections: prerequisite coursework and the professional program. The professional program is defined as the Medical Laboratory Science curriculum-specific courses (currently taken over a three-semester sequence).

Traditional Medical Laboratory Science Students

(Reference policy CLS-M-01)

A "traditional" Medical Laboratory Science student is defined as one who will complete the professional phase of the Medical Laboratory Science program in the cohort model. This includes all students except for the MLT to MLS Bridge Students described following this section.

Students may enroll as a traditional Medical Laboratory Science student from a variety of experiences and backgrounds. Beginning the 2023-2024 academic year, individuals seeking acceptance into the Bachelor of Science in Medical Laboratory Science program will submit a formal application for admission. Student cohorts for the professional program begin every January (spring semester).

- Students who begin their education at IU South Bend as freshman, coded as a pre-Medical Laboratory Science student, will complete all prerequisite courses as described in the Medical Laboratory Science degree map. The student will be advised by IU South Bend Academic Advisors during completion of these courses to ensure the student stays on target for completion. The semester prior to enrollment into the professional program, the student will submit a formal application for admission, as described in the application process.
- Students who have completed some courses at another institution, including other Indiana University campuses, will seek admission into IU South Bend as a transfer student, declaring pre-Medical Laboratory Science as their major. The student will be advised by IU South Bend Academic Advisors to ensure completion of all pre-requisite courses required in the Medical Laboratory Science degree map. The semester prior to enrollment into the professional program, the student will submit a formal application for admission, as described in the application process.
- Individuals who hold a Bachelor of Science in Biology, Chemistry, or a related

science may seek admission directly into the professional program. The individual should apply to Indiana University South Bend as a second-degree student, declaring Medical Laboratory Science as their intended major. The individual will submit a formal application for admission, as described in the application process and request transcripts for all previous degrees submitted to Indiana University South Bend. After transcripts from previously received degrees are received into the institution, the Program Director will review the application to determine if the individual has completed all requirements for admission. If all requirements are completed, the individual's application will be assessed with all other student applications for admission. In the event additional classes are required prior to entry, the individual may reapply for admission with the next cohort.

- Individuals holding a bachelor's degree in another field may seek admission into the program. The individual should apply to Indiana University South Bend as a second-degree student, declaring Medical Laboratory Science as their intended major. The individual will submit a formal application for admission, as described in the application process and request transcripts for all previous degrees submitted to Indiana University South Bend. After transcripts from previously received degrees are received into the institution, the Program Director will review the application to determine any additional courses that must be taken prior to entry. This may include completion of multiple science courses if the previous degree is not from a science discipline. If all requirements are completed, the individual's application will be assessed with all other student applications for admission. In the event additional classes are required prior to entry, the individual may reapply for admission with the next cohort.

MLT to MLS Bridge Students

(Reference policy CLS-M-02)

Individuals who hold an Associate of Science as Medical Laboratory Technicians and want to obtain a Bachelor of Science in Medical Laboratory Science may seek admission to the program through the MLT to MLS bridge track. This track offers direct admission that occurs on a rolling basis once Medical Laboratory Technician designation is confirmed. The student will be advised by IU Academic Advisors and the Medical Laboratory Science Program Director while completing required courses. For additional description of curriculum requirements, see the MLT to MLS Bridge section found in Chapter 4 of this handbook.

Standards for Admission

Admission to the Bachelor of Science in Medical Laboratory Science program is open to qualified individuals and complies with all applicable state and federal non-discrimination laws, including Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, and the Indiana Civil Rights Law. Indiana University South Bend Division of Clinical Laboratory Science will consider applicants who have met the minimal eligibility requirements for the program.

Traditional students: To be eligible for admission, a student must minimally:

- Be eligible for admission at Indiana University South Bend
- Have at least a 2.0 GPA
- Demonstrate the defined essential abilities with or without reasonable accommodations
- Comply with all policies and procedures of the program, college, campus, and/or university, including
  - Compliant background check with IU Policy PS-01
  - Provide proof of medical insurance
- Completed the appropriate application process
- Completed all prerequisite courses by the end of spring semester the year of beginning the program

MLT to MLS students: To be eligible for admission, a student must minimally:

- Be eligible for admission at Indiana University South Bend
- Have at least a 2.0 GPA
- Hold an associate degree in Medical Laboratory Technician or evidence of training through the armed forces

Prerequisite Course Requirements

First degree seeking students: Traditional students enrolled in the Bachelor of Science in Medical Laboratory Science will complete prerequisite coursework during the first five semesters, as described below. Students who transfer into IU South Bend may transfer in course credits so long as the course(s) are identified as equivalent to the IU South Bend expected course.

Year One – 32			
Fall Term		**Spring Term**	
Introduction to Biological Science I	5	Introduction to Biological Science II	5
Principles of Chemistry I	3	Principles of Chemistry II	3
Experimental Chemistry I	2	Experimental Chemistry II	2
Fundamental Literacies – Oral	3	Fundamental Literacies – Writing	3
Introduction to Health Sciences	3	Common core – A or T (FYS)	3
Total	16	Total	16
Year Two – 28			
Fall Term		**Spring Term**	
Extended Literacy	3	Common Core – A or T	3
Contemporary Social Values – U.S.	3	Epidemiology and Biostatistics – quant	3
Medical Terminology	2	Microbiology 200+	3
Common Core – N (CLS-N190)	3	Microbiology Lab 200+	2
Molecular Biology	3	Elective (consider biology minor)	3
Total	14	Total	14

Year Three – 31			
Fall Term		**Spring Term**	
Contemporary Social Values – Global	3	MLS program courses	
Ethics and Health Professionals – crit	3		
Elective (consider biology minor)	4		
Biology 300+ (consider biology minor)	3		
Total	14		

Second degree seeking students: Individuals who hold a bachelor's degree are eligible to enroll in the Medical Laboratory Science program as second-degree seeking students if they are able to demonstrate completion of the following requirements. Individuals who have not completed the required course(s) are able to enroll at IU South Bend as a pre-Medical Laboratory Science student.

- 8-10 credit hours general biology with laboratory course
- 8-10 credit hours general chemistry with laboratory course
- Microbiology with laboratory course – recommended but not required
- Molecular biology – may be completed while in the program
- Math with statistics

MLT to MLS bridge students: Individuals who hold an associate degree or training through the armed forces and are a certified Medical Laboratory Technician may complete the bridge program to earn a Bachelor of Science in Medical Laboratory Science and be eligible to challenge the MLS board exam.

Essential Abilities

(Reference policy CLS-M-04)
Essential abilities are the physical, intellectual, and behavioral expectations of the Bachelor of Science in Medical Laboratory Science program that students should possess to successfully participate in courses and clinical experiences. Additional information may be found in the Division of Clinical Laboratory Science policy CLS-M-04.

Communication skills

A student in the Medical Laboratory Science program must possess communication skills necessary to interact and communicate with faculty, classmates, healthcare professionals, and patients. Examples of communication skills include the able to:

- Establish rapport with faculty, healthcare professionals, patients, and classmates.
- Demonstrate effective communication skills that include verbal, non-verbal, and written forms.
- Obtain and disseminate relevant information as required to complete assignments and tasks.

Visual and perceptual skills

A student in the Medical Laboratory Science program must possess sufficient visual skills to perform and interpret laboratory assays and receive non-verbal communication appropriately. Examples of visual skills include the ability to:

- Have visual acuity corrected to 20/40 or better with the ability to accommodate at a distance of 10-20 feet,
- Judge distance and depth accurately,
- Read computer screens, documents with small print, and hand-written notation,
- Read lines, letters, and numbers on laboratory equipment as small as one millimeter apart,
- Characterize color, clarity, and viscosity,
- Observe items under a microscope using binocular vision.

Motor skills – physical ability, coordination, and dexterity

A student in the Medical Laboratory Science program must possess adequate motor skills to perform a variety of laboratory assays. Examples of manipulative skills include the ability to:

- Turn dials, press keypads, and move switches,
- Grasp and release small objects,
- Have fine motor control with corresponding hand-eye coordination. Hand functions should include rotation, squeezing, and repetitive movement,
- Have normal tactile feeling that is sensitivity to heat, cold, pain, pressure, etc.,
- Use full manual dexterity which includes the function of both arms, both wrists, both hands, and fingers, with or without a reasonable accommodation as determined by the IU South Bend Office of Accessible Educational Services,
- Utilize a computer keyboard and mouse,
- Lift and move objects weighing 20 pounds,
- Effectively and safely move from one location to another.

Intellectual and critical thinking skills

A student in the Medical Laboratory Science program must possess a range of intellectual skills that allows for mastery of a broad and complex body of knowledge that constitutes a medical laboratory science education. Examples of intellectual skills include the ability to:

- Use critical thinking skills necessary for sufficient clinical judgment,
- Follow directions and procedures accurately and completely,
- Define problems, measure, calculate, analyze data, and implement solutions,
- Identify cause and effect relationships,
- Exercise independent judgement,
- Organize workspace, make decisions, prioritize tasks, and work on multiple tasks simultaneously,
- Recognize potentially hazardous materials, equipment, or situations, and respond safely to minimize risk of injury,
- Use long-term and short-term memory skills,
- Receive and analyze academic and professional feedback through self-direction and self-correction.

Emotional stability and personal temperament

A student in the Medical Laboratory Science program must show emotional health and intellectual ability to exercise good judgment, to complete clinical responsibilities promptly, and to relate to patients, instructors, and colleagues with courtesy, and respect. Appropriate professional conduct includes the ability to:

- Fulfill commitments and be accountable for actions,

- Take responsibility for one's own learning and professional development,
- Work both independently and collaboratively as a professional team member,
- Be honest and forthright about error or uncertainty,
- Maintain professional decorum and composure under the stress of didactic and clinical demands,
- Show respect for personal, professional, and cultural diversity in the classroom and clinical setting,
- Exercise professional and ethical judgement, integrity, honesty, dependability, patient confidentiality, and adhere to the academic and professional code of ethics.

Application Requirements

Traditional students: Individuals who align with the definition of a traditional student must apply for entry into the professional program. This should occur the semester before the program starts. The following information outlines the requirements of the application.

Percentage	Element	Description
35%	Application GPA	Exact GPA on a 4.0 scale of the average attempts of all courses listed in the *Application Course Requirements* section.
25%	Essay	The average of reviewers scores awarded on a 4.0 scale. See the *Personal Essay* section for more details.
20%	Cumulative GPA	Exact GPA on a 4.0 scale of all courses taken at IU or external institutions.
10%	Prerequisite course completion	All prerequisite courses will be completed by the end of the semester prior to entering the professional program = 4 points Approved prerequisite courses will be completed while enrolled in the professional program = 2 points
10%	Laboratory experience	Description is required for answers. Has worked as testing personnel in a diagnostic laboratory for at least 6 months = 4 points Has worked as a laboratory assistant or phlebotomist for at least 6 months = 3 points Has worked in an environmental, food, or other laboratory for at least 6 months = 2 points Has worked as a student laboratory assistant or research assistant = 1 point

Personal essay: The Division of Clinical Laboratory Science values a personal reflection about why students are interested in the medical laboratory science program. This provides faculty with an insight into why students are interested in the profession and the students' passion for the medical field. Faculty look for authenticity, motivation, and experience in healthcare and/or the laboratory. This may be through school, a job, or personal experience.

The Bachelor of Science in Medical Laboratory Science can lead to many career opportunities. What has led you to this profession and how will this degree support you in achieving your personal and/or professional goals?

Write a one-page reflection in response to the question above. The essay must be concise, single-spaced with one-inch margins and 12-point font. Please include your student number ONLY in the top right corner. Per federal guidelines, all patient information must be kept in strict confidence and consequently, not shared in any manner; this includes specific details of family illnesses.

Estimated Cost of Program

Students enrolled in at least 12 credit hours per semester are charged using the IU South Bend banded tuition rate. Other students may be assessed tuition charges based on their residence. Up to date tuition rates and fees may be found on the Campus Fee List.

Tuition Rates	**Cost**
Undergraduate tuition, in-state	$249.73 / credit hour
Undergraduate tuition, in-state banded (12-18 credit hours)	$3,746.01 / semester
Undergraduate tuition, Indiana partner (Michigan, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, and Wisconsin)	$374.60 / credit hour
Undergraduate tuition, Indiana partner banded (12-18 credit hours) (Michigan, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, and Wisconsin)	$5,619.02 / semester
Undergraduate tuition, out-of-state	$711.87 / credit hour
Undergraduate tuition, out-of-state banded	$10,678.02 / semester

Additional fees and resources may be required while in the program. The following items are an estimate of costs during a student's time in the Medical Laboratory Science program. Please note that this is not an all-inclusive list, but rather an estimate of major costs for financial planning.

Item	**Cost**
Health and Human Servies Undergraduate Program Fee	$12.24 / credit hour
Student Services Fee (>6 credit hours)	$343.37 / semester
Castlebranch document management system (Used to submit required academic and health documentation)	$43.00
Background check (completed through Castlebranch)	$57.00
Urine drug screen (completed through Castlbranch)	$48.00
Tuberculosis test(s)	Various
Immunization(s)	Various
CPR certification	Various
Lab coat	Approx. $30.00
Textbooks	Approx. $600.00
LabCE (certification exam preparation)	$75.00
ASCP BOC Exam for Medical Laboratory Scientist (national certification exam after graduation)	$250.00

Program Progression

(Reference policy CLS-M-08)

Students will progress through the three semesters of the professional program as a cohort, completing all courses in a pre-determined order. During progression, students will be advised by faculty in the Division of Clinical Laboratory Science and IU South Bend academic advisors. While we hope to see all students complete the Bachelor of Science in Medical Laboratory Science program in the expected three semesters, we recognize that there are events that may prevent that from occurring. The following information is available to assist students navigate their academic career in the event that unforeseen circumstances arise.

Requirements for Good Standing

To be in good standing for the program, a student must continue to meet the standards for admission and the following:

- Earn a passing grade for each course in which the student is enrolled. A passing grade is considered a C (2.0 GPA or 73% grade equivalent)
- Demonstrate acceptable progress, at the judgement of the faculty, toward the requirements for the degree
- Demonstrate acceptable retention and translation of previously learned knowledge and skills
- Demonstrate safe practices in student laboratory courses and clinical rotation experiences
- Meet the minimum requirements for all related policies and procedures
- Demonstrate ethical and professional behavior in classroom and laboratory settings

Withdrawal from Courses

Students enrolled in the Bachelor of Science in Medical Laboratory Science are expected to complete all coursework as part of their cohort class. However, circumstances may occur in which the student cannot complete the course(s), such as a medical emergency or other unexpected crisis. In these situations, the Program Director will work with the student directly to determine a plan of action for course and program completion, as courses cannot be offered outside of their normal structure or sequence, and this may interfere with the student's graduation date. All communications and planning will be forwarded to the Assistant Dean of Student Success for permanent placement in the student file.

In any situation that a student wishes to withdrawal from courses, they must adhere to the Indiana University South Bend Withdrawal Requirements. Students are encouraged to speak with the Medical Laboratory Science Program Director prior to withdrawing from any courses.

Academic Leave of Absence

Students who wish to take an extended academic leave of absence should speak with the Medical Laboratory Science Program Director before doing so. Taking an academic leave of absence will impact the student's expected graduation date and may impact their ability to reenroll in the program courses upon returning.

Notifications of Opportunities for Improvement

(Reference policy CLS-A-04)

Students enrolled in the Bachelor of Science in Medical Laboratory Science program are followed academically by faculty. As students progress through courses and the curriculum, there may be opportunities for success that are identified. In these instances, the faculty will adhere to Policy CLS-A-03 Opportunities for Success Documentation.

In accordance with this policy, the student will be issued a Notification of Opportunity for Improvement form when a faculty member or clinical preceptor identifies are area in which improvement is needed. The form may be for didactic and laboratory courses or clinical externship. When a Notification of Opportunity for Improvement alert form is issued, the student will meet with the faculty (for class specific alerts) or the Program Director (for clinical rotation alerts) to discuss how the needed improvement will occur. At the end of the semester, or during the described times of the semester, the issuer of the form will meet with the student and Program Director to determine if the requirements were met.

Multiple Notification of Opportunity for Improvement forms for a course or evidence of no improvement will result in the creation of a success plan and possible grade reduction. Success plans may be developed at the course level or program level. The initiation of a course level or program level success plan will place the student on academic probation. If a student does not successfully complete a plan of success, this may lead to dismissal from the program. All documents and plans will be forwarded to the Assistant Dean of Student Success for permanent placement in the student file.

Dismissal from the Medical Laboratory Science program

(Reference policy CLS-M-09)

Academic dismissal from the Medical Laboratory Science program is a function of the Division of Clinical Laboratory Science faculty in consultation with the appropriate administrators and with regard to due process and legality. The dismissal of a student from the Medical Laboratory Science program will be initiated by the Program Director and reviewed by the School of Applied Health Sciences (SAHS) Council. Dismissal may be recommended for any of the following reasons (although not limited to them):

- Failure to comply with program, college, or university policies;
- Failure of any required course (i.e. grade below C, 2.0 GPA, or 73% course grade equivalent) which results in an out of progression status;
- Earning a semester grade point average below 2.0;
- Noncompliance with a Course Level or Program Level Success Plan which results in out of progression status;
- Personal or academic misconduct, as defined in the IU Code of Student Rights, Responsibilities, and Conduct;
- Gross negligence of safety in student laboratory courses or clinical rotation experience, as identified by the faculty or clinical preceptor;
- Unprofessional behavior in course, laboratory, or clinical locations.

Students who wish to appeal a dismissal decision must submit the appeal request in writing to the Program Director and Assistant Dean of Student Success within five business days of notification of the decision, in accordance with SAHS policy AS-05-C. If a recommendation cannot be made, the student may appeal to the Dean of the College of Health Sciences.

Reinstatement to the Medical Laboratory Science Program

(Reference policy CLS-M-10)

Students seeking reinstatement to the Medical Laboratory Science program must follow requirements outlined in Policy CLS-M-10 *Student Reinstatement to the Medical Laboratory Science Program*. Students must first be reinstated to Indiana University South Bend and the Vera Z. Dwyer College of Health Sciences, if dismissed from the University. Students who take a leave of absence do not need to apply with the University if they are in good academic standing. All reinstatement requests will be reviewed by the School of Applied Health Sciences Council and recommendations made to the Medical Laboratory Science Program Director. Students are encouraged to collaborate with the Assistant Dean of Student Success for support and direction with reinstatement requests.

Upon reinstatement, the student will enroll in a clinical reinstatement course to validate theory and clinical competencies. Students should be aware that this course is taken the semester prior to their official entry into the current cohort for degree completion.

Requirements for the Degree

The appropriate degree is conferred by Indiana University upon candidates who have successfully completed the following requirements:

- Complied with the policies, procedures, rules, and regulations of the Division of Clinical Laboratory Science, School of Applied Health Science, Vera Z. Dwyer College of Health Science, and Indiana University South Bend
- Completed all required coursework and/or received documented approval for exemption or prior learning credit as appropriate, including:
    - IU South Bend Campuswide General Education
    - Biological and chemical sciences
    - Health sciences
    - Major requirements (professional program requirements)
    - Completed a minimum 120 semester credits
- A minimum 30 credit hours at the 300 or 400 level
- Earned a passing grade of C (2.5 GPA or 73% course grade equivalent) in all coursework
- Earned a minimum 2.0 cumulative GPA
- Successfully completed all course, laboratory, and clinical requirements
    - Demonstrated minimum levels of evidence for all competencies as stated
- Discharged all financial obligations to the university
- Behavior and ethics consistent with acceptable professional standards
- Been recommended by the faculty of the Division of Clinical Laboratory Science for the degree due to meeting all stated program outcomes

While a goal of the Bachelor of Science in Medical Laboratory Science is to prepare students to successfully pass a national board exam to become a certified Medical Laboratory Scientist, the granting of the degree from Indiana University South Bend is not contingent upon a student taking or passing said board exam(s). Students are provided with resources and support and encouraged to take a board exam soon after graduation.

Chapter 3: Curriculum

Entry Level Competencies of Medical Laboratory Scientists

The Division of Clinical Laboratory Science strives to prepare graduates to be well-rounded entry-level laboratory practitioners. This includes knowledge in the following practice areas as defined by the National Accrediting Agency for Clinical Laboratory Science (NAACLS):

- Performance of laboratory tests in areas including clinical chemistry, hematology, hemostasis, immunology, immunohematology, microbiology, urinalysis and body fluid analysis;
- Application of safety and government regulations and standards as applied to clinical laboratory science;
- Principles and practices of professional conduct and the significance of continuing professional development;
- Communications sufficient to serve the needs of patients, the public, and members of the healthcare team;
- Principles and practices of administration and supervision as applied to clinical laboratory science;
- Educational methodologies and terminology sufficient to train and educate users and providers of laboratory services;
- Principles and practices of clinical study design, implementation, and dissemination of results.

Bachelor of Science in Medical Laboratory Science Educational Goals

The Bachelor of Science in Medical Laboratory Science educational goals are commitments made by the program to support students academically and professionally become Medical Laboratory Scientists. These goals are in alignment with the expected entry-level knowledge as defined by NAACLS and referenced when developing program and course learning outcomes.

I. Provide students with extensive preparation to work as a Medical Laboratory Scientist (MLS).
II. Address pre-analytical, analytical, and post-analytical components of laboratory services.
III. Prepare students to perform diagnostic assays, use troubleshooting techniques, interpret results, and evaluate procedures.
IV. Address quality assurance, quality improvement, and continuous assessment of laboratory services.
V. Address the importance of safety and application of government regulations and standards in the clinical laboratory.
VI. Foster growth through professional conduct and continuing professional development.

Traditional Medical Laboratory Science Curriculum

Students enrolled in the Bachelor of Science in Medical Laboratory Science as a traditional student (i.e. in a cohort) complete the following courses during their three semesters. Students must successfully complete all pre-requisite courses as defined in the degree map before beginning this portion.

Spring Semester 1

- CLS-C405 Clinical Chemistry (3 credit, lecture)
- CLS-C406 Diagnostic Methods (2 credit, lab)
- CLS-I407 Immunohematology and Transfusion Medicine (3 credit, lecture)
- CLS-I408 Blood Bank Methods (2 credit, lab)
- CLS-L420 Urinalysis and Body Fluid Analysis (2 credit, lecture)
- CLS-M403 Clinical Microbiology (3 credit, lecture)
- CLS-M404 Microbiological Methods (2 credit, lab)

Fall Semester

- CLS-C407 Hematology (3 credit, lecture)
- CLS-C408 Hematology Methods (2 credit, lab)
- CLS-C409 Hemostasis (2 credit, lecture)
- CLS-I411 Clinical Immunodiagnostics (3 credit, lecture)
- CLS-M411 Mycology and Parasitology (2 credit, lecture)
- CLS-M413 Advanced Clinical Microbiology (3 credit, lecture)

Spring Semester 2

- CLS-B399 Social and Behavioral Institutions – Clinical Laboratory Management (3 credit, lecture)
- CLS-C415 Molecular Diagnostics and Special Chemistry (3 credit, lecture)
- CLS-E401 General Externship I (2 credit, clinical rotation)
- CLS-E402 General Externship II (2 credit, clinical rotation)
- CLS-E403 General Externship III (2 credit, clinical rotation)
- CLS-E404 General Externship IV (2 credit, clinical rotation)

*The order and timing of courses is subject to change.

MLT to MLS Degree Completion Curriculum

Students who enter the Bachelor of Science in Medical Laboratory Science possessing an Associate in Medical Laboratory Technician will automatically have 46 credits applied toward the 120 credits needed to complete the degree. Courses may be transferred in to meet the general education or science course requirements.

General education courses, which may be transferred in from previous work, include:

- Writing (ENG-W131)
- Oral communication (SPCH-S12)
- Critical thinking (recommend HSC-W314 Ethics for Health Professionals)
- Quantitative reasoning (recommend HSC-H322 Epidemiology and Biostatistics)
- Contemporary social values
- Extended literacies

Foundational science courses include: • BIOL-L101 Introduction to Biological Sciences I Lecture and Laboratory • BIOL-L102 Introduction to Biological Sciences II Lecture and Laboratory • BIOL-L211 Molecular Biology • Elective 300/400 level biology course • CHEM-C105 Principles of Chemistry I • CHEM-C125 Experimental Chemistry I • CHEM-C106 Principles of Chemistry II • CHEM-C126 Experimental Chemistry II
Clinical Laboratory Science specific courses include: • CLS-B399 Behavioral and Social Institutions – Clinical Laboratory Management • CLS-C415 Clinical Molecular Diagnostics and Special Chemistry • CLS-E406 Supplemental Externship (optional 2 or 4 week rotation) • CLS-E407 Medical Laboratory Science Review • CLS-I411 Clinical Immunodiagnostics (if information literacy is needed; otherwise may be substituted) • CLS-M413 Advanced Clinical Microbiology
Additional 300/400 level courses from any department (Health Sciences, Biology, Chemistry, etc.) to ensure the student has: 1. At least 30 credit hours earned from Indiana University 2. At least 30 credit hours of 300/400 classes (may transfer some in) 3. A total of 120 credit hours (including those described in above sections)

*Courses and credit hour requirements may be subject to change.

Academic Information

Instructional Methods

Teaching is defined as all the activities employed by the faculty in order not only to transmit knowledge but to transform and extend it as well. Teaching begins with what the teacher knows and is a dynamic endeavor involving all the analogies, metaphors, and images that build bridges between the student learning and the student applying knowledge and skills. Courses may be designed utilizing a variety of approaches, which include:

- In-person, online, or hybrid modality
- Lectures
- Audio-visual materials
- Programmed instruction: interactive video and other independent study modules
- Individual, class and small group discussions, demonstration, and case studies
- Laboratory assignments
- Interprofessional experiences and assignments
- Team assessments
- Peer-to-peer learning, skill demonstration, and testing
- Quizzes, tests, oral, written and practical exams, including comprehensive examination
- Self-reflection
- Supplemental reading: textbooks, printed material, assignments, handouts, etc.

Evaluation Methods

Course grades are determined by evaluation of the degree to which the student met the course objectives. Course syllabi outline the course grading or weighting criteria by which scores from evaluation methods determine a final grade. Methods are determined by the faculty in alignment with program assessment and quality assurance plans and may include tests, quizzes, written assignments, group assignments, presentations, laboratory assignments, and clinical experiences.

Grading Scale

(Reference policy CLS-A-05)

All courses in the Medical Laboratory Science Program utilize the following grading scale. An attainment of at least a C, or 73%, is required to successfully pass a clinical or didactic course. Failure to receive a final grade of "C" will require the student to retake the course and may impact progression and graduation.

The Medical Laboratory Science Grading Scale for didactic and clinical course work is:

100-97 = A+	89-87 = B+	79-77 = C+	69-67 = D+	59-below = F
96-93 = A	86-83 = B	76-73 = C	66-63 = D	
92-90 = A-	82-80 = B-	72-70 = C-	62-60 = D-	

The following grades are used in determining grade point averages throughout the program using the corresponding four (4) point system:

A+ = 4.0	B+ = 3.3	C+ = 2.3	D+ =1.3	F = 0
A = 4.0	B = 3.0	C = 2.0	D = 1.0	I = Incomplete
A = 3.7	B- = 2.7	C- = 1.7	D- = 0.7	

Incomplete Grades

In accordance with Indiana University South Bend policy, a grade of incomplete (I) may be given to a student when a substantial amount of coursework (75%) is satisfactorily completed by the end of the semester. The grade of I is awarded only under circumstances of hardship, when it is unjust to hold the student to the time limits ordinarily fixed for completion of coursework. The grade is given only when the completed portion of the student's work is of passing quality. Students enrolled in the Bachelor of Science in Medical Laboratory Science must speak with the instructor of any course(s) for which the incomplete grade needs to be given and the Program Director.

A student must remove the incomplete grade within one calendar year from the date it is recorded or, if required by the instructor, a shorter period of time. If the student fails to remove the incomplete grade within the time allowed, the grade automatically changes to an F.

Final Grade Submission

In accordance with the guidelines established by the University Faculty Council, final grades are due to the Office of the Registrar 48 hours after final exams. Final course grades for clinical externships are submitted within 48 hours of the last externship day. All grades are reported in Canvas and can be found in SIS.

Grade Grievance

If a student wishes to dispute a final course grade, Indiana University South Bend has a Grade Grievance Policy to follow.

1. The student must discuss the matter with the faculty member who assigned the grade no later than the end of the next regular semester.
2. If the faculty member disagrees with the student's case for changing the grade, the student may appeal to the Medical Laboratory Science Program Director.
3. If the Program Director disagrees with the student's case for changing the grade, the student may appeal to the Dean of the College of Health Sciences.
4. If the faculty, Program Director, and Dean all disagree with the student's case for changing the grade, the student may appeal to the Academic Affairs Committee, who will make a recommendation to the Vice Chancellor for Academic Affairs.

Student Laboratory Courses

(Reference policy CLS-M-05)

Students enrolled in the Bachelor of Science in Medical Laboratory Science complete in-house laboratory activities in a dedicated student laboratory classroom. These activities are included in several Clinical Laboratory Science courses including CLS-C406 Diagnostic Methods, CLS-C408 Hematology Methods, CLS-C415 Molecular Diagnostics and Special Chemistry, CLS-I408 Blood Bank Methods, CLS-L420 Urinalysis and Body Fluid Analysis, and CLS-M404 Microbiological Methods.

The Clinical Laboratory Science laboratory classroom, comprising Dwyer Hall Rooms 144, 144A, and 144B, is an approved Biosafety Level 2 (BSL-2) by the Indiana University Institutional Biosafety Committee (IBC) under protocol #SB-978. Student activities in the Clinical Laboratory Science laboratory classroom are currently restricted to teaching. Additional testing may occur in this facility under an approved Indiana University Revenue Producing Activity (RPA) #2885.

Laboratory Expectations

While in the student laboratory, students must adhere to the following expectations. Failure to abide by the following may result in the student being dismissed from class for the day, receiving a zero for the assignments, and possible further disciplinary action if the noncompliance continues.

1. Food, water bottles, gum, and drinks of any kind are prohibited in the laboratory while laboratory activities are taking place. The one exception is when the

laboratory is used as a normal classroom and all specimens, reagents, supplies, and equipment are put away.
2. All personal items must be stowed while in the laboratory.
3. Cells phones are allowed in the laboratory if they are in a pocket that is inside and protected by a lab coat; this does not include a lab coat pocket. Phones should not be placed on the counter or shelves. If use of a phone is necessary, remove gloves and wash hands before doing so.
4. Headphones are not allowed in the student laboratory. While working independently, students may have one earbud so long as they are able to hear instructions and comments by the faculty, staff, and other students. Earbuds should not be touched while wearing laboratory gloves and only after hands have been washed.
5. Keep workstation clean and free of chemicals, dirty glassware, and contaminated articles such as towels or lint-free tissue. Workstations must be cleaned and decontaminated prior to leaving or whenever they have visible contamination.
6. Spills must be cleaned immediately as outlined in the *Student Laboratory Safety Manual.* Significant spills and contamination must be reported to the faculty or staff in the laboratory.
7. Mouth pipetting is prohibited.
8. Gloves must be disposed of, and hands washed before leaving the laboratory.
9. Injuries must be documented and reported to the program director as outlined in CLS-A-02 *Incident Report and Review* policy.
10. Adhere to additional guidelines and practices described in the *Student Laboratory Safety Manual.*

Laboratory Attire

Students are expected to wear acceptable laboratory safety attire while performing laboratory activities. Failure to abide by the following will result in the student being dismissed from class for the day, receiving a zero for the assignments, and possible further disciplinary action if the noncompliance continues.

Personal protective equipment (PPE) is specialized clothing or equipment worn or used for protection against hazards. Personal protective equipment is used as an additional safeguard from contamination of clothing, skin, mucous membranes, or puncture wounds.

- Laboratory coats – Coats are expected to be worn whenever performing laboratory activities. These are purchased by the faculty, staff, or student and should be fluid resistant.
- Laboratory gloves – Nitrile laboratory gloves that are acceptable for working with blood and body fluids are provided by the program in a range of sizes. These must be worn during laboratory activities that involve blood, body fluids, microorganisms, and chemicals. Activities where a student is simply observing stained slides using a microscope do not warrant the need for gloves.
- Pants - Legs must be covered to avoid skin contamination or injury from pathogens, chemicals, or reagents. Shorts and Capri pants are not allowed. Skirts

and dresses are allowed if they are long enough to cover the legs entirely. Leggings and hosiery (nylons) are not allowed because chemicals or specimens, if spilled, can 'wick' and be held against the skin for prolonged periods of time, causing extensive exposure and/or injury.

- Shoes – Shoes should be comfortable and must enclose the entire foot. Open toe, open heal, and sandals are not allowed in the student laboratory, even if socks are included.
- Hats – Hats with a brim that obscure the eyes are not allowed. Other headgear, including beanies, scarves, headbands, etc., may be worn if they do not pose a danger of being caught in equipment, contaminating, or being contaminated with specimens or reagents, and are not distracting.
- Jewelry – Jewelry may be worn if it does not pose a danger of being caught in equipment, contaminating, or being contaminated by specimens or reagents, and is not distracting.
- Long hair and beards – Hair and beards must be tied back in such a way to avoid contamination and interference with laboratory equipment and specimens.
- Eyewear – Sunglasses and other darkly tinted eyewear are not allowed, unless medically necessary and recommended by the Office of Disability Support Services. Protective eyewear should be worn whenever there is the risk of aerosol exposure or splashing. If students do not normally wear glasses, they should have safety glasses regularly available for such incidents.
- Nails – Fingernails should be clean and at a length that will not hinder the ability to wear gloves or perform tasks. Artificial nails are not encouraged as they offer a higher possibility of trapping and carrying infectious agents.
- Earbuds and headphones – The ability to use earbuds and headphones in the student laboratory is dependent on ability to do so safely. The expectation is that the student is able to hear the instructor, fellow students, instrument alerts, and any safety alerts that may occur (i.e. fire alarms). A single earbud may be used in the student laboratory only while independent working occurs. When the instructor or fellow students are presenting information, earbuds and headphones should be removed to ensure hearing occurs and distractions are reduced. Large headphones that block hearing are not permitted. The manipulation of earbuds, headphones, or devices providing music (i.e. cell phones) must be done safely by removing gloves and washing hands before handling.

Laboratory Training

All students enrolled in the Bachelor of Science in Medical Laboratory Science program will complete laboratory safety training provided by Indiana University within the first week of their first semester. These safety training modules will be incorporated into a course as an assignment and will include:

- Biosafety Training
- Bloodborne Pathogens Training
- Laboratory Safety Training

- Additionally, all students will complete HIPAA training for Privacy & Safety and Mobile Devices.

Infectious Agent Exposure

Every specimen, real or fabricated, must be treated as though they potentially contain an infectious agent. It is not possible for the Medical Laboratory Science faculty to know every infectious agent that a student may be exposed to while working with specimens obtained from local laboratories.

The specimens utilized in CLS-M404 Microbiological Methods are fabricated from stock cultures of known bacteria and yeast. The following list includes the microorganisms that a student may be exposed to while completing laboratory activities in this class.

Acinetobacter baumanii	*Achromobacer xylosoxidans*	*Bacteroides fragilis*
Bacillus species	*Campylobacter jejuni*	*Candida albicans*
Candida glabrata	*Candida krusei*	*Candida parapsilosis*
Capnocytophaga species	*Clostridium perfringens*	Diphtheroids
Elizabethkingia meningoseptica	*Enterobacter hormachei*	*Enterococcus casseliflavus*
Enterococcus faecalis	*Enterococcus saccharolyticus*	*Escherichia coli*
Escherichia coli O157:H7	*Eubacterium* species	*Fusobacterium* species
Gardnerella vaginalis	*Haemophilus influenzae*	*Haemophilus parainfluenzae*
Klebsiella oxytoca	*Klebsiella pneumoniae*	*Kocuria kristinae*
Listeria monocytogenes	*Micrococcus luteus*	*Moraxella catarrhalis*
Morganella morganii	*Neisseria gonorrhoeae*	*Neisseria meningitidis*
Ochrobactrum anthropi	*Prevotella melaninogenica*	*Proteus mirabilis*
Proteus vulgaris	*Providencia rettgeri*	*Pseudomonas aeruginosa*
Serratia marcescens	*Shigella sonnei*	*Staphylococcus aureus*
Staphylococcus epidermidis	*Staphylococcus saprophyticus*	*Staphylococcus sciuri*
Stenotrophomonas maltophilia	*Streptococcus agalactiae*	*Streptococcus equi* spp. *zooepidemicus*
Streptococcus pneumoniae	*Streptococcus pyogenes*	*Streptococcus salivarius* spp. thermophilus
Streptococcus thermophilus		

Clinical Rotation Experience

(Reference policy CLS-M-06)

Clinical externships are designed to expose students to the working environment of a clinical laboratory and to provide an opportunity for students to become familiar with instrumentation that is not available in the student laboratories. Students are expected to perform assigned tasks as designated by the clinical preceptor responsible for each specific clinical area, adhering to the suggested experiences included in the rotation evaluation form.

Activities performed during the clinical rotations range from observation to performance of testing on simulated specimens to performance of testing on actual patient specimens with supervision. The student can expect to observe the performance of tests at the beginning of the rotation experience with the progression to hands-on performance of testing as the student gains proficiency. Some of the highest complexity, most expensive, or higher biosafety level tests may be observational only, depending on the laboratory and the methodology. It is understood that not all clinical locations are able to perform the same testing as each other and some testing is performed in different departments depending on the structure of the clinical facility. Allowing for this variation, the rotation evaluation forms include overlap of testing and include a way to report "Testing not performed".

Students will be required to participate in any orientation process required by each clinical site and abide by all policies and procedures of that site while they are on the premises. Failure to do so will result in dismissal from the assigned clinical externship and may result in failure of the particular clinical externship and possible dismissal from the Medical Laboratory Science program.

The student may be required to provide documentation of immunization history and up-to-date screening test for tuberculosis to the clinical site, if requested. It is the student's responsibility to provide this information and failure to submit documentation may result in the student not being able to complete their clinical externship at that site and delaying the progression of the student through the program.

Clinical Rotation Placement

All students enrolled in the Bachelor of Science in Medical Laboratory Science program at Indiana University South Bend will be placed at a clinical site provided they have submitted all required documentation and are eligible academically to proceed to the clinical externship. Students are eligible to complete the clinical externship when they have completed all the pre-requisite Medical Laboratory Science courses.

Students will be requested to submit a list of three to four clinical affiliate sites listed in order of preference. Clinical rotation placement cannot be immediately guaranteed. However, the faculty overseeing the clinical externships, in consultation with the Program Director if needed, will place students in clinical locations to match preferences as close as possible. Clinical placements will depend on the availability of seats at the clinical site. Students may be expected to interview prior to placement and the clinical site may reserve the right to refuse students.

In the event that there are more students seeking clinical rotations than clinical sites available, the Program Director (or designated faculty) will continue to communicate with clinical sites about adding full or partial rotations for students. If this does not resolve the challenge, the Program Director will communicate with students to consider summer clinical rotations and/or supplement with in-house simulated rotations.

If a situation occurs, with either the student or the clinical site, which prevents the student from continuing the clinical externship at the assigned clinical site, the program work with the student to complete the clinical externship at another site, as long as the student remains academically eligible to complete the clinical externship and the program.

Clinical Rotation Schedule

Clinical sites can determine the order of rotations, as long as they do not conflict with campus semester and vacation schedules. Exceptions to this rule must be discussed and approved in advance by the Program Director and, depending on the variation requested, the Dean of the Vera Z. Dwyer College of Health Sciences or Executive Vice Chancellor of Academic Affairs.

Students will spend four days a week for 16 weeks at their clinical site. The four clinical externship courses (CLS-E401, CLS-E402, CLS-E403, and CLS-E404) are two credits each and correspond to a four-week block. To align with the structure of the clinical externship courses, experiences have been clustered into four categories. In general, these categories will include:

- Chemistry – chemistry, immunology, molecular diagnostics, phlebotomy, and specimen processing
- Hematology – hematology, hemostasis, urinalysis, body fluid analysis
- Microbiology – bacteriology, mycobacteriology, mycology, parasitology, and virology
- Blood bank – blood banking, transfusion services, and donor services

Service Work Policy

Service work is defined as performing the duties expected of an employee, who is paid to perform those tasks, as an unpaid student. Service work by students is not required nor permitted by the Medical Laboratory Science program. Students are present in the clinical laboratory during clinical externships to gain hands-on experience with the operation of the clinical laboratory. While learning and upon demonstrating proficiency, students may perform clinical tests under the supervision of an instructor who is a certified medical laboratory scientist. As such, students work on actual patient samples but at no time are they expected to, nor allowed to, perform service work without pay.

Students may obtain employment in the clinical laboratory in which they are completing clinical externship rotations. However, students and supervisors at the clinical site must make a distinction between the student's time in the laboratory as a student, who is learning and not being paid, and when the student becomes an

employee, who is paid to work in the laboratory on tasks for which they have been specifically trained. Students should not be treated as employees during clinical externship rotation times. What students do outside the time during which they are expected to be learning in the clinical laboratory is beyond the scope of control of the program.

Course Descriptions

CLS-B399 Human Behavior and Social Institutions – Clinical Laboratory Management (3 cr.) This course provides an entry level understanding of the clinical laboratory management team responsibilities. Topics include general management theories, federal regulations and government organizations, financial management, operations management, human resources, and career success and development. Human behaviors and social interactions are further explored and applied in independent and group projects.

CLS-C405 Clinical Chemistry (3 cr.) Clinical Chemistry is one of the key disciplinary areas for entry-level competency as a Medical Laboratory Scientist. Students will examine the basic principles and practices used in the clinical chemistry laboratory including fundamental mathematics for laboratory measurements, analytical techniques, and clinical correlations. An emphasis will be placed on acid base balancing, lipid and protein identifications, enzymatic action, and their correlation with the endocrine system in clinical diagnostics.

CLS-C406 Diagnostic Methods (2 cr.) In conjunction with CLS-C405 Clinical Chemistry, students will be exposed to the basic and fundamental principles of contemporary medical laboratory diagnostic practice, through practical laboratories that present both the principle and procedure for basic and common diagnostic laboratory techniques conducted manually or with instrumentation.

CLS-C407 Hematology (3 cr.) Hematology is one of the key disciplinary areas for entry-level competency as a Medical Laboratory Scientist. Students will examine the foundational principles of routine hematology and identify peripheral blood and bone marrow cells at various stages of development through visual observation of stained slides. Components of the complete blood count are evaluated using manual and automated methods and correlated to hematologic diseases. Advanced topics in this course include hemoglobinopathies and the development of hematologic malignancy. Molecular, Immunological, and immunophenotyping techniques are examined in relation to widespread and well-established hematological disease profiles.

CLS-C408 Hematology Methods (2 cr.) In conjunction with CLS-C407 Hematology and CLS-C409 Hemostasis, students will be exposed to the basic and fundamental principles of contemporary medical laboratory hematology practice, through practical laboratory exercises that present both the principle and procedure for basic and common hematological laboratory techniques including red and white cell

differentiation, erythrocyte sedimentation, and traditional blood smear. Studies of coagulation are also included to provide an understanding of normal and abnormal hemostatic properties.

CLS-C409 Hemostasis (2 cr.) Students will examine principles of clinical hemostasis and mechanisms that lead to coagulation disorders. Laboratory testing will be applied to the diagnosis of normal status, hemorrhagic disorders, and thrombotic disorders. Antithrombotic therapies and their laboratory assessment will also be discussed.

CLS-C415 Clinical Molecular Diagnostics and Special Chemistry (3 cr.) P: CLS-C405 and CLS-C406, CLS-I411. This course includes an introduction to the principles, methodologies, and applications of molecular biological procedures used in clinical laboratories. Emphasis is placed on the molecular biological procedures used in medical laboratory science, including those used in the molecular detection of infectious agents that cause human disease, human identification, the diagnosis of inherited diseases, the diagnosis of cancer, and the determination of risk factors for the development of cancer.

CLS-E401 General Externship I (2 cr.) P: Successful completion of CLS courses M403, M404, M411, M413, C405, C406, I407, I408, C407, C408, C409, and L420. The General Externship I is one of four externship (experiences) courses that occur during the senior year of study in the Medical Laboratory Science program at IU South Bend. During the clinical rotations, students receive hands-on knowledge and experience in all commonly practiced areas of clinical diagnostics including clinical chemistry, microbiology, immunohematology, hematology, hemostasis, immunology, urinalysis, and body fluid analysis. Students are placed in regional laboratories and hospital organizations, within a reasonable distance, and with consideration of student living and transportation needs. Placement are facilitated by the program director and faculty in collaboration with clinical partners with whom a current IU South Bend affiliation agreement has been established.

CLS-E402 General Externship II (2 cr.) P: Successful completion of CLS courses M403, M404, M411, M413, C405, C406, I407, I408, C407, C408, C409, and L420. The General Externship II is one of four externship (experiences) courses that occur during the senior year of study in the Medical Laboratory Science program at IU South Bend. During the clinical rotations, students receive hands-on knowledge and experience in all commonly practiced areas of clinical diagnostics including clinical chemistry, microbiology, immunohematology, hematology, hemostasis, immunology, urinalysis, and body fluid analysis. Students are placed in regional laboratories and hospital organizations, within a reasonable distance, and with consideration of student living and transportation needs. Placement are facilitated by the program director and faculty in collaboration with clinical partners with whom a current IU South Bend affiliation agreement has been established.

CLS-E403 General Externship III (2 cr.) P: Successful completion of CLS courses M403, M404, M411, M413, C405, C406, I407, I408, C407, C408, C409, and L420. The General Externship III is one of four externship (experiences) courses that occur during the senior

year of study in the Medical Laboratory Science program at IU South Bend. During the clinical rotations, students receive hands-on knowledge and experience in all commonly practiced areas of clinical diagnostics including clinical chemistry, microbiology, immunohematology, hematology, hemostasis, immunology, urinalysis, and body fluid analysis. Students are placed in regional laboratories and hospital organizations, within a reasonable distance, and with consideration of student living and transportation needs. Placement are facilitated by the program director and faculty in collaboration with clinical partners with whom a current IU South Bend affiliation agreement has been established.

CLS-E404 General Externship IV (2 cr.) P: Successful completion of CLS courses M403, M404, M411, M413, C405, C406, I407, I408, C407, C408, C409, and L420. The General Externship IV is one of four externship (experiences) courses that occur during the senior year of study in the Medical Laboratory Science program at IU South Bend. During the clinical rotations, students receive hands-on knowledge and experience in all commonly practiced areas of clinical diagnostics including clinical chemistry, microbiology, immunohematology, hematology, hemostasis, immunology, urinalysis, and body fluid analysis. Students are placed in regional laboratories and hospital organizations, within a reasonable distance, and with consideration of student living and transportation needs. Placement are facilitated by the program director and faculty in collaboration with clinical partners with whom a current IU South Bend affiliation agreement has been established.

CLS-E406 Supplemental Externship (1 – 2 cr.) P: Offered exclusively for students in the MLT to MLS bridge track. This practicum course is part of the MLT to MLS bridge and is designed as an independent study experience for experienced MLT professionals who require additional training in selected laboratory practice. Students may complete 2 weeks (Tuesday – Friday) for 1 credit hour or 4 weeks (Tuesday – Friday) for 2 credit hours. This course will be taught as needed in all terms.

CLS-I407 Immunohematology and Transfusion Medicine (3 cr.) Immunohematology, also known as blood banking, is one of the key disciplinary areas for entry-level competency as a Medical Laboratory Scientist. This course is intended to provide the student with a foundation of the fundamentals of immunohematology. Focus is placed on red blood cell immunology as it relates to ABO/Rh typing procedures, antibody detection and identification techniques and compatibility testing. Hemolytic disease of the newborn, component therapy, transfusion reaction investigation, quality control and problem solving will be introduced. Blood donor program regulations will also be introduced.

CLS-I408 Blood Banking Methods (2 cr.) Taught in conjunction with CLS-I407 Immunohematology and Transfusion Medicine. This course provides practical laboratory experiences that are used for conducting diagnostic testing in the blood bank. Students will perform ABO/Rh typing, antibody screen and identification, crossmatching for

blood compatibility, and fetal screen testing. Real patient specimens are used to provide an authentic learning experience.

CLS-I411 Clinical Immunodiagnostics (3 cr.) Clinical immunodiagnostics is one of the key disciplinary areas for entry-level competency as a Medical Laboratory Scientist. Students study antigen and antibody interactions as biomarkers of disease and the use of antibodies as reagents in the detection of disease. Students examine the foundational principles of clinical immunology, flow cytometry, cancer immunology, and autoimmune disease including a focus on testing and diagnosis of common infectious diseases, autoimmune diseases, cancers, and transplant challenges.

CLS-L420 Urinalysis and Body Fluid Analysis (2 cr.) This course is foundational to the Clinical Laboratory Science curriculum. In this course, students analyze urine and other body fluids for cellular, chemical, and physiological changes. Students identify artifacts in urine and other body fluids through microscopic examination. Macroscopic, microscopic, and chemical analysis of urine and other body fluids is correlated with various disease states.

CLS-M403 Clinical Microbiology (3 cr.) Clinical microbiology is one of the key disciplinary areas for entry-level competency as a Medical Laboratory Scientist. In this course, students will examine principles of clinical microbiology and identify microorganisms by traditional biochemical methods, immunologic methods, and molecular methods. Topics also include specimen collection and processing, macroscopic and microscopic description of bacteria, bacterial identification, and disease correlation. Students will describe the epidemiology, pathology, and public health impact of disease caused by each microorganism discussed.

CLS-M404 Microbiological Methods (2 cr.) Taught in conjunction with CLS-M403 Clinical Microbiology, students will apply principles of clinical microbiology and identify microorganisms by traditional biochemical and serologic methods. Students will evaluate simulated specimens, plate specimens according to protocol, culture and identify aerobic and anaerobic bacteria macroscopically and microscopically, and perform manual and semi-automated methods for bacterial detection and identification. Antimicrobial susceptibility testing will be performed and interpreted using various methods.

CLS-M411 Mycology and Parasitology (2 cr.) P: CLS-M403 Clinical Microbiology and CLS-M404 Microbiology Methods. This course is an extension of the foundational knowledge gained in CLS-M403 Clinical Microbiology. In this course, students will examine principles of clinical mycology and parasitology and identify fungi and parasites using traditional, immunologic, and molecular methods. Students will be able to describe the epidemiology, pathology, and public health impact of disease caused by each fungus and parasite discussed.

CLS-M413 Advanced Clinical Microbiology (3 cr.) P: CLS-M403 Clinical Microbiology and CLS-M404 Microbiology Methods. This is an advanced clinical microbiology course in which students will have the opportunity to explore topics beyond those in a

foundational microbiology course. Students will expand their knowledge of antimicrobial resistance, learn about bioterrorism agents and their global impact, promote microbiology concepts beyond the laboratory setting, and broaden their knowledge in clinical virology.

CLS-N390 The Natural World (3 cr.) Explores an important scientific or technological issue in modern society. Applies scientific methods and interdisciplinary perspectives in an examination of the subject. Investigates the broader implications and ethical dimensions of scientific research and technological advancement.

These courses are designed to align with campus General Education requirements and available to all IU South Bend students as a way to educate others outside of the Medical Laboratory Science program.

- CLS-N390 Variable title - Vaccines: Science and Society. This course examines the science behind vaccines and how they work in the body. Historical perspectives and current vaccination recommendations are offered while focusing on the most widely used vaccines in the United States. This course introduces students to the scientists and healthcare professionals involved with the research and development of vaccines, dissemination of vaccines to the community, and surveying of infectious diseases and vaccine use. The influence of vaccines and infectious diseases on societal beliefs is also discussed, from scientific and ethical perspectives.

Chapter 4: Student Expectations

Introduction

Students enrolled in the Bachelor of Science in Medical Laboratory Science program are completing a comprehensive curriculum within the Vera Z. Dwyer College of Health Sciences. Students are expected to adhere to the policies, procedures, and expectations of Indiana University, Indiana University South Bend, the Vera Z. Dwyer College of Health Sciences, and the Division of Clinical Laboratory Sciences. The following expectations are listed in alphabetical order.

Academic Honestly

All Indiana University students are expected to demonstrate academic honesty and integrity in all courses and on all assignments. Academic dishonesty is the representation or attempt to represent another's work as one's own or participating actively in such falsification. Examples of academic dishonesty include, but are not limited to, plagiarism, cheating, and facilitating academic dishonesty.

Plagiarism is the act of intentionally using material, regardless of the source (other than material which is common knowledge), without acknowledging the source of that material. Some examples of plagiarism include but are not limited to (1) taking a table or figure or other information off a web site without saying where it came from, (2) buying or using a paper that someone else wrote, (3) or rephrasing materials without giving credit to the source.

Besides plagiarism, other behaviors are also considered to violate academic integrity. A few are listed as examples, but are not meant to be all-inclusive:

1. Permitting anyone to copy or duplicate your work.
2. Providing another student with answers during an exam or looking at another student's test paper during an exam.
3. Copying or downloading computer software without proper authorization.
4. Breaking into or using university/medical center owned computer files in an unauthorized manner.
5. Performing any course work (*e.g.*, exams or assignments) of a web course for someone else or having someone other than yourself complete your web course work.
6. Submitting the same assignment with substantively the same content for a grade in two Clinical laboratory Science courses without permission from the instructors of both courses.
7. Using materials or answers hidden on one's person, personal effects, or electronic device that contains answers for an exam without the explicit approval of the course instructor.

Suspicions of academic dishonesty will be investigated by the course instructor and reported to the Program Director. Disciplinary actions may be imposed by the course instructor such as:

1. Having the student repeat the assignment
2. Giving a grade of F (zero points) on the assignment
3. Giving a grade of F in the course, resulting in a requirement to repeat the course and academic probation

The Program Director may also institute disciplinary actions, if warranted, such as:

1. A program-level success plan
2. Academic probation for the Medical Laboratory Science program
3. Dismissal from the Medical Laboratory Science program

Attendance

Students are expected to attend all lecture and laboratory classes. In the case of an absence, it is the responsibility of the student to speak with the instructor to receive any additional material provided during the class session and find out if any assignments are due. Students should also speak with a peer to receive information or notes from the class session.

Attendance may be monitored at the discretion of the instructor and may be taken into consideration when final grades are calculated. Students should review the syllabus for each course to determine if any specific attendance requirements are included and if attendance will be considered when calculating the final grade. Students should refer to policy CLS-M-06 *Medical Laboratory Science Clinical Rotations* for detailed information about attendance related to clinical rotation experiences.

Cardiopulmonary Resuscitation (CPR)

(Reference policy CLS-M-07)

In compliance with DCHS policy AS-16-B, all students enrolled in a program of the Vera Z. Dwyer College of Health Sciences must have CPR certification before they are allowed to participate in clinical experiences. CPR certification is valid for two years and must be re-certified if expiration occurs before or during the clinical externship experience. Documentation of CPR certification must be on file in CastleBranch by the date indicated.

CastleBranch

The CastleBranch Bridges system is a document control software platform that is used by clinical programs in the Vera Z. Dwyer College of Health Sciences. All required documentation will be submitted by the student into their CastleBranch account. The Medical Laboratory Science Program Director and approved staff of the Vera Z. Dwyer College of Health Sciences will have access to student accounts to ensure documentation is submitted by the required date.

Cellular Phones

Students are required to place all cellular phones on a **silent mode** while in lecture. Cell phones are not allowed in the student or clinical laboratories for safety reasons. If a circumstance warrants the need of a cell phone in the laboratory, the student must (1) receive permission from the instructor and (2) keep the cell phone in a pocket inside of their lab coat. Students will not be excused from class to make phone calls unless it is an emergency. Students will **not** be allowed to use cellular phones during examinations unless approved by the instructor.

Classroom Etiquette

Collegial behavior is expected of all students attending courses in the Medical Laboratory Science program to maintain a respectful environment. Any student who is not demonstrating a professional or collegial behavior will be asked to leave the classroom and must meet with the instructor prior to the next class session. In the instance that disruptive behaviors continue, the Program Director will be informed and an Opportunity for Improvement Notification will be completed.

In accordance with Indiana University South Bend policy, children are not permitted in the classroom, laboratory, or clinical setting at any time.

As a courtesy, students are to request permission from the instructor if they wish to tape or digitally record the class session or lecture.

Confidentiality

As clinical students and future healthcare professionals, it is imperative that confidentiality is maintained in all clinical settings. The confidentiality policy, DCHS policy AS-13-C, is so significant that the guidelines are included here for your reference. Violation of these guidelines can result in disciplinary actions, failure of an assignment or course, and/or dismissal from the program.

1. All records, including originals and copies, should not be removed from their location.
2. Students granted record accesses are accountable for the protection of the record and its contents while in their possession on site and for the purpose of the site roles and responsibilities only.
3. Students accessing information from medical records shall follow the strict guidelines set forth by the setting (including providing written requests for review, keeping the materials in the setting, and reviewing the records in the area specified for this purpose).
4. It is prohibited to share the medical record with family, friends, and staff not directly involved in the patient's care.
5. Students are expected to keep the medical records accessible at all times for medical care purposes.

6. Photocopying, photographing, or printing off any part of the medical record for a student's purpose is strictly prohibited. Students cannot photocopy parts of the record for their learning purposes. Data cannot be saved to portable devices and laptops cannot be brought to the settings. Students are prohibited to take photographs of any document, patient record, site policy, treatment protocols, etc. with their cell phone or camera. Violations of this policy may result in immediate removal from the site, disciplinary actions, and/ or dismissal from the program.
7. When referring to patients in written work for schoolwork purposes, only initials are to be used. When possible, all identifying information should be kept to a minimum.
8. HIPAA guidelines are to be followed at all times as outlined by each setting and federal regulations.
9. Professional standards expect that students withhold discussing any patient situations and confidences outside the professional setting. Situations may only be discussed in private, for the purpose of learning, as instructed by the instructor. When discussing patients in the learning situation, confidentiality is to be maintained, including but not limited to personal identifiers such as name, email, address, gender, or others.
10. Students cannot share verbal, written, or photo Information in public settings which includes face to face and / or social media platforms with patients, family members, or friends of the patient including personal e-mails. This includes photos / social media postings of the student at the site even if the patient or family members are not visible, to protect the site.

Criminal Background Check

(Reference policy CLS-M-07)

In accordance with DCHS policy AS-07-C, students enrolled in the Bachelor of Science in Medical Laboratory Science program must submit a background check prior to enrollment in the professional phase of the program. Students receive information from the Vera Z. Dwyer College of Health Sciences Student Success Center regarding access and completion of the background check. The approved background check, compliant with IU policy PS-01, includes a criminal background and sex offender registry check within the last five years. Documentation of compliance with this requirement submitted by the student into their CastleBranch account.

Drug Screen

(Reference policy CLS-M-07)

Students must take and pass a 10-panel (at minimum) urine drug screen prior to entry into clinical externships. Failure to pass the drug screen may impact a student's ability to begin clinical rotations and complete the Bachelor of Science in Medical Laboratory Science program. Documentation of drug screen testing must be submitted by the student into their CastleBranch account.

Students who are prescribed medication that will cause a positive test result must report

that to the testing location prior to taking a drug screen test. Student completion of clinical externship rotations while on medications may occur, provided the Program Director is notified and approval is given by an accepted healthcare professional.

Funerals

Students are permitted three (3) days of bereavement (includes didactic and clinical days) leave for immediate family. The immediate family includes great/grandmother & grandfather, grandmother, grandfather, mother, father, in-laws, legal guardians, brothers, sisters, sons, daughters and one (1) day bereavement for friends, aunts, uncles, nieces, and nephews. If additional time is needed, please seek approval from the Medical Laboratory Science Program Director. Students are asked to verify their absence by providing the Program Director with documentation.

Health Insurance

In accordance with DCHS policy AS-17-B, students enrolled in the Bachelor of Science in Medical Laboratory Science program are required to maintain personal health insurance coverage. In the event the student requires medical care during a clinical externship rotation, it is the responsibility of the student to cover the cost of treatment. Proof of personal health insurance must be submitted by the student into their CastleBranch account.

HIPAA Training

Students enrolled in the Bachelor of Science in Medical Laboratory Science program are required to complete HIPAA training prior to beginning clinical externship rotations. HIPAA training may be completed through IU Expand. Specific information about HIPAA training will be provided to students during the first week of the program.

Immunizations

(Reference policy CLS-M-07)

All students enrolled in the Bachelor of Science in Medical Laboratory Science program must submit proof of immunizations for the following:

- **Tetanus/Diphtheria/acellular Pertussis (Tdap):** within 10 years
- **Measles/Mumps/Rubella:** 2 doses unless born prior to 1957 or serologic proof of immunization
    - Measles, mumps, and rubella immunization is provided as a combination vaccine. Therefore, loss of immunity for any one component requires a booster for all.
- **Varicella (Chicken Pox):** single component varicella-zoster virus (VZV) vaccine or measles, mumps, rubella, varicella (MMRV) vaccine or serologic proof of immunization
    - A written note or medical record of varicella infection is not sufficient evidence of immunization
- **Tuberculosis:** TB screening requirements follow most current CDC guidelines. Potential methods to appropriately screen include TB skin (Mantoux) 2-step (for

initial), TB (Mantoux) 1-step (for subsequent), interferon-gamma release assay (IGRA) (ex. Quantiferon Gold or T-spot serum assays) if TB skin test positive or previous BCG vaccination, or chest X-Ray (previous TB infection, BCG vaccination or symptoms).

- **Influenza Immunization:** Annually before the date indicated (usually around December 1).
- **Hepatitis B Immunization:** 3-dose vaccine series, with the first shot required before program due date unless the student is shown to be immune, the vaccine is contraindicated for medical reasons, or a declination is signed.
- **COVID-19:** vaccination required of all Indiana University students prior to beginning course unless an exemption is submitted and approved.

Proof of all immunizations, declinations, and/or exemptions must be submitted by the students into their CastleBranch account. NOTE: Proof of immunizations may be requested by clinical affiliate sites and may influence the ability of a student to complete clinical externship rotations at that site. The student is responsible for submitting proof of immunization to the clinical site, if requested.

Impaired Student

(Reference policy CLS-A-03)

Indiana University South Bend and the Bachelor of Science in Medical Laboratory Science program have a zero-tolerance policy for alcohol and/or drug use. If an instructor suspects that a student is impaired, the student will be removed from academic setting and report for testing at an identified location. Results of the test must be submitted to the Medical Laboratory Science Program Director by the testing facility. The Program Director, in consultation with the School of Applied Health Sciences Council, will determine if any additional actions are needed.

Jury Duty

Students called for jury duty will be excused from clinical and/or didactic classes. In the event that it lasts longer than 3 days, students may be required to make-up missed course work and clinical externship time at the discretion of the Program Director. In the event that the student misses an abundance of clinical and didactic work, progression to the next semester may be affected.

Professional Conduct

Professionalism relates to the intellectual, ethical, behavioral and attitudinal attributes necessary to perform as a healthcare provider. Students are expected to demonstrate professionalism while in classroom, laboratory, and clinical locations. Expectations of professional conduct are further described in policies CLS-M-05 *Student Laboratory Safety and Expectations* and CLS-M-06 *Medical Laboratory Science Clinical Rotations.* Aspects of professional conduct evaluated and documented may be found in the *Opportunity for Improvement in Didactic and Laboratory Courses Form* and the *Opportunity for Improvement in Clinical Rotation Form*.

Snow Days/Inclement Weather/Campus Closure

When inclement weather forces the closure of the Indiana University South Bend campus, all students are released from class and clinical externships. If a student is in a clinical rotation and Indiana University South Bend announces that it will close, they will be dismissed from clinical rotations at that time. Students who decide to stay at a clinical rotation are doing so on a voluntary basis. Students are not required to make-up lost clinical time due to school closures. School closures are generally announced via the local news and through electronic communications from Indiana University South Bend.

Social Media Guidelines

Social media sites and downloadable applications are popular communication tools. Each presents unique opportunities for individuals to interact, remain in contact, and have the potential to augment friendships and professional interactions. As healthcare professionals with a unique social contract and obligation, students must be mindful of the public nature of these forums and the permanent nature of social media postings. While these sites offer excellent potential to bolster communication with friends and colleagues, they are also a potential forum for lapses of professionalism and professional behavior. While these sites may give the impression of privacy, postings and other data should be considered public and freely visible by the public. The Division of Clinical Laboratory Science has adopted the following guidelines and best practices to assist students in safely and responsibly using these sites and avoid lapses in professional judgement that may prevent continuation with the program.

Professionalism

- Postings online are subject to the same professional and ethical standards as interpersonal interactions.
- Statements made online or in applications will be treated as if verbal statements were made in a public space.
- Content, photos, videos, etc. that is not your original content must be posted with acknowledgement that this is not your original work.
- If you chose to identify yourself as an IU South Bend student, you have chosen to create perceptions about the university and Medical Laboratory Science program by all who have access to your site. All content posted and available must be consistent with your position at the school and reflect the standards and values of the program, school, campus, and university.
- Relationships online with colleagues and students are all governed by the IU policy against sexual harassment. Cyber stalking, requests from those who you supervise to engage in activities outside of work, and inappropriate postings to social networking sites while supervising trainees can all be considered forms of sexual harassment.

Privacy

- Closely monitor the privacy settings of your social network accounts to optimize their privacy and security.

- Maintain the privacy of all colleagues when referring to them in a professional capacity unless they have given you permission for their names, images, or likenesses to be used.

Confidentiality

- Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations apply to comments made on social networking sites, and violators are subject to the same prosecution as with other HIPAA violations.
- Patient privacy measures taken in any public forum apply to social networking sites as well.
- Online discussions of specific patients are prohibited, even if all identifying information is excluded. It is possible that someone could recognize the patient to whom you are referring based upon the context.
- Photos must be reviewed to ensure no patient information and/or identifiable images of other patients is viewable in the background.

Style of Writing

In alignment with the academic programs of the Vera Z. Dwyer College of Health Sciences, the Bachelor of Science in Medical Laboratory Science program has adopted the APA Style of Writing for all formal writing assignments.

Chapter 5: Resources for Student Success

Students are not expected to navigate their entire academic career all by themselves. Student success in the Bachelor of Science in Medical Laboratory Science program, at Indiana University South Bend, and college in general must be supported by the academic institution and educational program. Indiana University South Bend offers several resources to support students during their time on campus and beyond.

Academic Advising

The Indiana University South Bend Center for Undergraduate Advising employs three professional advisors dedicated to undergraduate programs of the Vera Z. Dwyer College of Health Sciences. The advisors are knowledgeable and skilled in their abilities to counsel students throughout their journey at Indiana University South Bend. Whether it is a question regarding course planning, scholarships and financial assistance, or graduation process, the advisors are available and willing to assist. Students may schedule an advising appointment using the Student Appointment Scheduler (SAS) app in the One.IU account.

Indiana University South Bend Academic Affairs

The Indiana University South Bend Academic Affairs oversees several offices in support of students during their time at Indiana University South Bend.

Office of the Registrar

The Office of the Registrar website is a valuable resource for many things related to academics. At this site, students may find instructions for how to register for classes, see the academic calendar, calculate grades and GPA, view academic policies, peruse the schedule of classes, request transcripts, and review the Family Education Rights and Privacy Act (FERPA).

Office of Accessible Educational Services

The Office of Accessible Educational Services is committed to ensuring students with physical and learning disabilities are able to participate in, benefit from, and contribute to all university programs, services, and activities. Students who wish to utilize the services offered need to communicate with the Office of Accessible Educational Services to seek accommodations. Students who file for accommodations must submit letters from the Office of Accessible Educational Services to each faculty member teaching courses. This must occur each semester for every class enrolled.

Student Counseling Center

The Student Counseling Center is available to assist to assist students with a variety of personal and emotional challenges. Individuals are available to assist with academic stress and time management; body image and eating disorders; diversity, equity, and inclusion; drug and alcohol addiction; emotional well-being; family and relationship stress; grief, loss, and trauma; intimate partner violence; sexual assault; and suicide

prevention.

Academic Center for Excellence

The Academic Center for Excellence provides assistance and mentoring to help students master content and develop skills and strategies for academic success. While there are no Clinical Laboratory Science specific tutors available, the center offers support centers, such as the Writers' Room, that may benefit students as they complete the Bachelor of Science in Medical Laboratory Science courses.

Titan Success Center

The Titan Success Center is committed to the success of students during their academic career, from assistance with online courses and time keeping to FAFSA completion to emergency relief resources. The Emergency Relief Scholarship is available for students who need assistance for short-term needs like transportation, bills, food, and clothing. They also connect students to a variety of local resources for students.

Office of Veteran Student Services

The Office of Veteran Student Services seeks to support those who served our country during their academic career at Indiana University South Bend. The office is available to assist students and families with personal support and assistance with VA education benefits and the college experience.

Library

Indiana University South Bend is the home of the Franklin D. Schurz Library and the Dorothy J. Wiekamp Educational Resource Commons (WERC). The Schurz Library has six floors of literature and media resources, along with open computer spaces and quiet places for individual and group study. The library is often open for extended hours during the week of final exams. Whether onsite or online, the Schurz Library offers support to students with course and research needs. Medical Laboratory Science has access to a program subject guide and a dedicated librarian, Rhonda Culbertson (rculbert@iusb.edu).

The WERC is located on the second floor of the Education & Arts Building and offers 3D printing, large format printing, laminating, binding, and die-cut making for all of your class project needs.

University Information Technology Services (UITS)

The University Information Technology Services (UITS) at Indiana University South Bend is available to support students with all IT needs. They are located in the Education & Arts building 1109 during business hours and online via chat. UITS maintains the Student Technology Centers, NetExpress stations, and printing stations around campus. Students may purchase gently used computer from UITS and check out hot spots for at home internet needs. Additionally, the Knowledge Base is a single location search for answers to IT questions.

COVID-19 Information and Resources

As the presence of COVID-19 (SARS-CoV-2) continues, science expands, and content is updated, students may find information on the Indiana University COVID-19 Resource Page. Students may find links for reporting positive test results, receiving vaccine boosters, masking guidelines, and mitigation testing.

Course Instructor Evaluations

Students are invited and encouraged to complete course evaluations using the online Explorance Blue survey for each course enrolled in. This information is confidentially compiled, reported, and the feedback collected is used to improve course instruction. Your participation is highly valued and appreciated. Invitation to complete evaluations will be provided by Canvas each semester when the evaluations are open.