

# STUDENT HANDBOOK

2022–2023 ACADEMIC YEAR

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# **Welcome to the Medical Laboratory Sciences Program!**

This material is compiled to answer your questions concerning the general policies and procedures of the Wichita State University (WSU) Medical Laboratory Sciences (MLS) Program. It will serve as a reference and guide as you complete the requirements.



## **COMPETENCIES OF THE GRADUATE**

As described by the certification agency Medical Laboratory Sciences, American Society for Clinical Pathology, the graduate must be competent in areas of Body Fluids, Blood Bank, Chemistry, Hematology, Immunology and Microbiology. The following competencies are assessed by the certification agency:

- x Applied knowledge of theory and principles related to:
  - o anatomy (Body Fluids)
  - o biochemistry (Chemistry and Hematology)
  - o education
  - o genetics (Blood Bank and Molecular Diagnostics)
  - o growth characteristics/diagnostic and infective forms (Microbiology)
  - o immunology (Blood Bank and Immunology)
  - o laboratory information systems

- x Evaluates:
  - o appropriate actions and methods
  - o corrective actions
  - o patient-related requirements
  - o possible sources of error or inconsistencies
  - o quality control procedures
  - o specimen-related requirements
- x Evaluates laboratory data to:

# MEDICAL LABORATORY SCIENCES PROFESSIONAL PROGRAM

The professional curriculum in the SW MLS program is designed to provide the student with a strong background in the principles and methodologies involved in the various areas of Medical Laboratory Sciences. The fulltime professional curriculum is four semesters in length, the part time program is six semesters in length. The professional curriculum consists of 62 hours in MLS courses. A reduced-credit-hour option is also available for graduates of associate degree medical laboratory technician programs with ASCP certification; this 27 to 32 credit hour program offers activities which extend the medical laboratory skills and knowledge of the associate degree program. Upon satisfactory completion of any of these programs, the graduate will be eligible to sit for national certification exams.

## ACCREDITATION

The Program is accredited by:

National Accrediting Agency for Clinical Laboratory  
Sciences (NAACLS)  
5600 N. River Rd. Suite 720  
Rosemont, IL 60018-5119  
Phone (773) 714-8880  
<http://www.naacls.org/>

## ADMISSIONS CRITERIA

Deadline for receipt by the MLS Office for all application materials, including references, is April 1 for all semester entry and November 1 for next spring semester entry. Students will be accepted for fulltime and part-time enrollment. Students must be fulltime during the Clinical Semester.

ACCEPTANCE is based on the following criteria:

A. Grade Point Average (GPA):

Minimum GPA of 2.5 on a 4.0 scale. Points are assigned as follows: Overall GPA x 10 = points. (Example; GPA of 2.5: 2.5 x 10 = 25 points) Note: All courses, which are pre requisites for the MLS program, must be completed with a grade of 2.0 or above on a 4.0 scale before entering the professional phase of the MLS Program.

B. References (3): Maximum of 15 points to be determined as follows:

Statements/evaluations support high recommendation of candidate – 5 points each

Statements/evaluations support recommendation – 4 points each

Statements/evaluations support recommendation with reservation – 2 points each

- C. Application Form: Maximum of 18 points may be assigned. Points will be based upon activities, such as those listed
1. Evidence of knowledge of health care (up to 6 points) such as:
    - Work/volunteer in a medical laboratory - up to 6 points
    - Work/volunteer in health care or patient care, other than medical laboratory up to 4 points
  2. Evidence of ability to lead or participate in





Semester in a medical facility. MLS students participate in over 100 hours of student laboratory practice on the WSU campus before they are eligible to enter the clinical phase of the program. Student laboratory sessions provide the student with opportunities to practice basic clinical procedures on prepared specimens in a controlled setting. Student laboratories afford the student an opportunity to practice before practicing on actual patients.

During the Clinical Semester, the student rotates through the specialized clinical laboratory departments at the medical facility. The clinical experience provides opportunity for students to apply their newly acquired skills, knowledge and attitudes as a member of the health care team. Graduates of the program are awarded a BS in MLS degree and are eligible to apply for national certification examinations.

## Pre-Requisites of the Program

All students earning a baccalaureate degree at WSU

## Full-Time Program Plan

Students may begin the program in fall or spring semester. The full time professional program is four semesters in length. Three semesters are completed on campus and the fourth and last semester, the clinical semester, is completed at a medical facility.

Fall Courses		Credit Hours
MLS 453	Clinical Chemistry/Urinalysis	8
MLS 463	Clinical Hematology	8
Total Hours		16
Spring Courses		Credit Hours
MLS 473	Immunohematology	8
MLS 495	Clinical Microbiology	8
Total Hours		16
Summer		Credit Hours
MLS 400	Clinical Laboratory Management	3
MLA 452	Principles of Urinalysis	2
MLS 494	Special Topics in Microbiology	3
Total Hours		8

The Clinical Semester: These courses are taken in the last semester of study and are offered every semester.

MLS 479	Applied Immunohematology	3
MLS 488	Core Lab Practicum	8
MLS 498	Applied Clinical Microbiology	3
Total Hours		14

**Total Program Hours 54**

## Part Time (Half-time) Program Plan

Students may begin the part time program in fall or spring semester. The part time professional program is six semesters in duration. Five semesters are completed on campus and one semester is completed at a medical facility. The parttime option is not available during the summer semester nor the clinical semester.

Assigned semesters are scheduled to allow two part-time students to enroll in one full-time opening. **The program has only two, part-time student positions/semester. Applicants must apply as a part-time student if you wish to be considered.**

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Summer  
MLS 400

Lecture rooms are assigned by either the College of Health Professions office or the University and are usually located in Ahlberg Hall. Student laboratories scheduled by the department in rooms 113, 125 and 127 of Ahlberg Hall.





x Analysis



- o Rosette and Kleihauer-Betke
- x Blood Donation
  - o Donor requirements
  - o Donor testing
- x Transfusion Therapy
  - o RBC
  - o PLT
  - o FFP
  - o Cryoprecipitated AHF
  - o RhIG
- x Transfusion Reactions
- x HDFN

**MLS 494 Special Topics in Microbiology (3) 2R 2L** The study of the medically important fungi, parasites, viruses, and other obligate intracellular organisms emphasizing their identification in the clinical laboratory. Discusses life cycles and their relation to the infection/disease process.

### Content Outline of Special Topics in Microbiology

- x Fungi
  - o Yeast (e.g. Candida, Cryptococcus, Geotrichum, Malassezia)
  - o Dimorphic fungi (e.g. Blastomyces, Coccidioides, Histoplasma, Sporothrix)
  - o Dermatophytes (e.g., Epidermophyton, Microsporum, Trichophyton)
  - o Zygomycetes (e.g. Absidia, Mucor, Rhizopus)
  - o Opportunistic molds/septate hyaline molds (e.g., Aspergillus, Penicillium)
  - o Dermatiaceous molds
- x Mycobacteria
  - o Mycobacterium tuberculosis complex (e.g., tuberculos(i)-4.6 (c)-1.-26.o02 T12.3 (p(o)10.9 D1 Tf C

**MLS 495 Clinical Microbiology (8) 6R 6L.** Theory and practice of isolation and identification of human pathogenic micro-organisms, including (a) procedures for specimen processing in the clinical laboratory; (b) normal flora of human body sites; (c) morphological, cultural and serologic characteristics of medically significant microorganisms; and (d) antimicrobial principles and susceptibility testing techniques. Prerequisite: admission to the MLS program.

Basic theory and laboratory practice of a) procedures for specimen processing in the laboratory; b) normal flora of human body sites; c) morphological, cultural and serologic characteristics of medically significant bacteria, fungi and parasites; and d) antimicrobial principles and susceptibility testing techniques. Prerequisite: Admission to the MLS program.

Content Outline of Clinical Microbiol(i)-2 3s16 (e)-3.6 (nt)4.3 ( O)JTJ 0.005 Tc -0.005 Tw 4.239 0 T9 0 T9 0 71.3

## **REQUIRED TEXTBOOKS**

MLS 400 and 411 no text required

MLS 453 and 458 Clinical Chemistry, 8<sup>th</sup> ed. Bishop. 2018.

MLS 452 Fundamentals of Urine and Body Fluid Analysis, 4<sup>th</sup> Edition, Brunzel, Nancy A. 2018.

MLS 463 and 468 Clinical Laboratory Hematology, 4<sup>th</sup>

## Coursework Expenses

Textbooks (used - new)	\$400-\$850
Liability Insurance (required for the clinical semester included with student fees)	\$ 13.00
ASCL Student Membership (optional)	\$ 25.00
CPR certification	\$ 30.00
KSCLS meeting expense *	\$ 45.00

\* This expense will be waived if the MLS Student Association acquires necessary funding to attend the KSCLS meeting during the spring semester of the program.

## Post-Program Expenses

National Certification Examination	\$240.00
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## Financial Assistance

Scholarships and grants are available through the University, College, Department and Professional Organizations. For scholarship information on sponsorship program information, consult with the Program Director. Department scholarships are awarded in the fall and spring. Students may apply for department scholarships until they are in their first semester of the program.

# **POLICIES YOU NEED TO KNOW**

## **SAFETY FIRST**

Student laboratory and clinical setting experiences are important aspects of study for all programs of the College of Health Professions. Such study comes with responsibilities: you must protect yourself from infectious agents with which you may come into contact.

8.



**Urine Test for Drugs of Abuse-** Documentation of negative tests for drugs of abuse is required before the start of the **Clinical Semester** at some affiliated site facilities

**Covid-19 vaccine** – Documentation of two shots and booster

## Health Insurance

Our affiliation agreements with clinic affiliates require documentation of health insurance coverage throughout the Clinical Semester Application information for insurance may be obtained through WSU at the Student Health Services or the MLS office

## Pregnancy

Pregnant students are required to submit a physician's statement to the cl6gD7469 (a)-1.7(d t)d (i)6.2 ()2 (v)1t>e



facility. Students **will not** be placed at a clinical site until all compliance documentation is on file in the MLS office

## Student Laboratory and Clinical Semester Attire

During student laboratories and the Clinical Semester

- x Official WSU MLS scrubs will be worn

the WSU logo with the wording; **allow 7-21 days from order to receipt of scrubs at the Shockerstore.** Scrubs should be purchased for use during all student labs and all ~~clinical~~ clinical days.

Students will adhere to all policies of the clinical affiliate, including dress code, when on clinical rotations. In the event facilities have less stringent ~~policy~~ policies than the WSU policies stated in this manual,

## **POLICIES FOR ACADEMIC PROGRESSION**

The following policies will be followed concerning student progression in the professional phase of the WSU MLS program.

### **Enrollment**

A student must maintain a

## STUDENT CONDUCT

Students are expected to read and adhere to the pol

All specimens, lab results and interpretations of lab results are ultimately the property of the patient.





# THE CLINICAL SEMESTER

The Clinical Semester for the WSU ML program consists of 3 rotations, Core Lab, Clinical Microbiology and Blood Bank. The College of Health Professions has affiliation agreements with many clinical sites. Some sites are program specific such as PT or PA. Please let us know at the beginning of the program if there is a particular site that you wish to complete your clinical practicum as we may or may not have an affiliation agreement with your preferred clinical site. This is especially true if you would like a site outside of Kansas. It may take upwards of a year to obtain an affiliation agreement with particular clinical sites.

## Current Clinical Affiliates (at the time of printing of this handbook)

Affiliated Medical Services Wichita, KS  
American Red Cross Wichita, KS  
Ascension Via Christi Hospital Manhattan, KS  
Ascension Via Christi St. Francis Wichita, KS  
Children's Mercy Hospital Kansas City, MO  
Clinical Reference Laboratory Lenexa, KS  
Hutchinson Clinic Hutchinson, KS  
Hutchinson Regional Medical Center- Hutchinson, KS  
Lawrence Memorial Hospital LMH Health Lawrence, KS  
McPherson Hospital McPherson, KS  
Mitchell County Hospital Health System Beloit, KS  
Newman Regional Health Emporia, KS  
NMC Health- Newton, KS  
Olathe Health- Olathe, KS  
Quest Diagnostic Laboratory Midwest Region- Lenexa, KS  
Regional Medical Laboratory (JPMCC) Tulsa, OK  
Research - 04 250.92 3le ET Q q 77.64 250.92 37-0.9 (M)-1.4 0 040 g /TT2 1 Tf



## **COURSE DESCRIPTIONS FOR CLINICAL ROTATIONS**

**Core Lab Pracw 14.04 0 0fN5 (w 14.04u)-2 (OmTc 0 Tw 4.Tw 15.96 04(317(P)-12.4: MS)§ (I**

The suggested division of time during the immunohematology rotation is:

- 3 weeks at a medical center plus 3-5 days at the Red Cross center (Wichita area only); OR
- 4 weeks at a regional medical center

**Applied Clinical Microbiology Rotation: MLS 498 (3 credit hrs.)**

Clinical Microbiology rotation includes interpretation and work-up for body site cultures, automated methods, stain interpretation, antimicrobial susceptibility testing, quality control, mycology testing, parasitology testing and virology testing, as available at the clinical site. The suggested division of time during the clinical microbiology rotation is:

- 2

5. Recognize normal vs. abnormal WBC, RBC and platelets on a blood smear.
6. Correlate CBC findings with WBC differential findings.
7. Recognize specimen problems and respond appropriately.
8. Make a good peripheral blood smear.
9. Use a microscope.
10. Perform and respond to delta check outliers
11. Recognize and respond to critical values.
12. State the basic operating principles of hematology/hemostasis/urinalysis/ET /Artifacts11.2.

Applied Clinical

## LABORATORY AND CLINICAL SEMESTER ATTIRE

- Official WSU MLS scrubs will be worn without accessories
- Shoes that protect the entire foot including the toe and heel should be worn
- Long hair should be secured so as not obstruct vision or become a biohazard
- Dangling jewelry, which may create a hazard, should not be worn in the laboratory
- Students are expected to maintain proper hygiene
- Students will adhere to requirements of their rotation site

## PROFESSIONALISM

Students will follow the safety and confidentiality policies of the facility at which they are completing a rotation. Students will maintain a professional attitude during all aspects of the MLS program. Professional attitude includes: accepting responsibility for didactic and laboratory course work confidentiality, academic integrity, ethics, and respect for others at all times. Non-professional behavior includes: noncompletion of tasks, failure to follow instructions, verbal abuse including swearing, rudeness, overly argumentative, and violation of copyright policies.

## Conduct

Conduct in direct violation of professional ethics, standards and conduct in direct violation of the policies and procedures of either the clinical affiliate or MLS program, will result in the immediate removal of the student from the clinical assignment and may result in termination from the professional program.

## Personal Electronic Devices

Students may not bring personal electronic devices into the clinical laboratory. Personal electronic devices are defined as electronic, portable, entertainment, communication, or information storage devices, such as cell phones, computers and media players. Students may not use the communication devices present at the clinical affiliate facility for purposes other than patient care. Students may request permission from the clinical instructor to carry a personal electronic device under unusual circumstances, such as monitoring a sick child at home.

## Holidays and Student Breaks during Clinical Rotations

Student holidays (Labor Day, Martin Luther King Day, etc.) conform to the holiday schedule of the clinical affiliate for the current rotation. Student breaks (spring break, winter break, etc.) are at least one week in length and are listed on the rotation schedule.

## Reflection Classes and Comprehensive Examination Fridays

On assigned Fridays during the Clinical Semester, the student will return to WSU for reflection and review classes in the morning and comprehensive exams in the afternoon. The student will not go to the clinical site on these Fridays. Students, who are completing clinical rotations that are over 100 miles from WSU, may request to leave 2 hours early on the Thursday before the Friday exam in order to travel.

## Clinical Rotation Evaluation Checklists

The student in the clinical facility is expected to develop required competencies ~~Measurable~~. Therefore, it is expected that the student will improve their performance during the clinical experience as a result of their learning experience. Evaluation is based on observation of skills and behavior during the rotation period, and by written ~~and~~ quizzes which help the clinical instructor determine competency development. Final evaluation is documented on Rotation Checklists and signed by clinical instructors and the student. These checklists are sent, or brought by the ~~student~~ sealed, signed envelope, to the school. These evaluations contribute to the grade for clinical rotation courses.

# MEDICAL LABORATORY SCIENTIST STUDENT SURVIVAL GUIDE

(From Previous MLS Classes to You)

## I. Parking

- a. **DO NOT BE LATE**
- b. Plan to arrive 15 minutes before 8 am in order to get a parking spot
- c. If you have problems in the morning, give the office a call and let them know. It is much more likely to be forgiven if you do so. Put the number on your speed dial ~~978~~ 6-3146.

## II. Study Tips

- a. Exchange e-mails and phone numbers with your classmates. Find out who lives close to you and start study groups (you can reserve rooms in the library).
- b. Start good study habits now. Meaning: **STUDY YOUR NOTES EVERY NIGHT!!! DO NOT CRAM, IT WILL NOT WORK.** First, the volume of information is too large to do so and second, we actually need this stuff in our profession, so learn it.
- c. Find what works for you early. The typical student purchases 2 ½" to 3" binders for each class (no exaggeration – you will have a lot of notes).
- d.

### III. Hints

a. General information

Come to class, seriously. Don't be late, it's rude and unprofessional

**PAY ATTENTION, TAKE NOTES, STUDY A LITTLE BIT EVERY DAY**

b. Plan for full days Ask questions

c. Pick out important information in test questions

d. The Clinical Semester

The Comps: will cover all material from the program, including reading assignments from the texts. Save everything.

Clinical days: Arrive to the site on time and be ready to work

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