



MEDICAL LABORATORY SCIENCES

Student Handbook

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Mission

The mission of the Florida Southern College/Lakeland Regional Health Medical Laboratory Science degree program is to empower students to attain the necessary knowledge and skills to successfully practice in the dynamic field of laboratory science. We believe that by promoting wellness, education and discovery, our graduates will have a positive impact on society and help to deliver the best outcomes and safest care to the surrounding community.

Goals

The goals of the Medical Laboratory Science program are:

- ❖ To empower our students to gain the necessary education to be part of a high performance laboratory team that provides timely and accurate laboratory results for the purpose of diagnosing and treating disease and maintaining health
- ❖ To instill the importance of quality assurance and quality improvement in all aspects of laboratory performance
- ❖ To build and sustain a courteous and professional working environment for students, patients, and all members of the healthcare team
- ❖ To grow the profession of medical laboratory science through the provision of highly skilled and dedicated professionals
- ❖ To encourage students to be lifelong learners as they seek to maintain professional competence and continuing education for career growth
- ❖ To teach and promote ethical behavior and to provide the building blocks for future leadership endeavors

Philosophy

The Medical Laboratory Science degree program provides the student with didactic and field experiences required for working in a clinical laboratory within a hospital, public health, research laboratory, private or industrial setting. Within the curriculum, the program provides exposure to the necessary experiences which lead to the development of competent practicing Medical Laboratory Scientists. Graduates will utilize critical thinking skills as well as educational and technical understanding to identify problems, research knowledge relating to the problems, evaluate clinical situations related to the problems, and make decisions concerning solutions. The program will also provide opportunities to develop supervisory and management skills, and will enable students to pursue graduate studies. The broad technical and professional experiences will enable future employers to develop the student's fullest potential as a working member of the laboratory and healthcare team.

Program Overview

The MLS degree is an allied health career opportunity for students interested in working in a clinical laboratory.

Medical laboratory scientists work behind-the-scenes, processing laboratory tests that doctors count on to correctly diagnose, monitor and treat patients, and practice preventative medicine. Medical laboratory scientists primarily work in hospitals, clinics, private laboratories, public health organizations, research laboratories, and research and development departments of pharmaceutical companies.

Medical Laboratory Scientists assist doctors and other healthcare staff, including nurses, in choosing the correct lab tests and ensure proper collection methods. Medical Laboratory Scientists then receive the patient specimens, analyze the specimens, interpret and report results. A Pathologist may confirm a diagnostic result, but often the Medical Laboratory Scientist is responsible for interpreting and communicating critical patient results to the physician.

Job tasks for medical laboratory scientists include identification of infectious agents such as bacteria, viruses, fungi, and parasites; analysis of blood to detect disorders such as leukemia, hemophilia and immunodeficiency; measuring the presence of antibodies in blood to indicate infection with agents such as Human Immunodeficiency Virus (HIV); analysis of molecular tests such as Polymerase Chain Reaction (PCR) for the detection of emerging diseases; and assuring the quality of blood for transfusions. In addition, laboratory scientists assure the quality of test data, compare and select appropriate laboratory methods and instruments, provide physicians with information on the validity and significance of test results, and supervise other laboratory personnel.

This four year degree includes experience working in the clinical laboratories of Lakeland Regional Health. Students will begin taking courses at the Medical Center hospital beginning in their third year, before transitioning into a full time internship at Lakeland Regional Health during their fourth year.

Students are required to maintain an overall Florida Southern College GPA of 3.0, and have a final grade of C or better in all major and prerequisite courses. Students who are unable to maintain the required academic standards may be unenrolled from the MLS program.

The degree program is seeking accreditation through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). Students completing the program will receive a bachelor's of science degree, indicating successful completion of all required studies.

Upon completion of the program, students are eligible to sit for a number of exams, including the American Society for Clinical Pathology Board of Certification examination (ASCP BOC). The ASCP is the primary registering organization for the industry. The exam is designed for generalists in the field of Medical Laboratory Science. The granting of the degree is not contingent upon the student passing the certification exam.

About Florida Southern College

Founded in 1883, Florida Southern College is a private, comprehensive college and the oldest college in Florida. Florida Southern maintains its commitment to academic excellence through more than 50 undergraduate programs and distinctive graduate programs in business, accounting, education, and nursing. Florida Southern has a 13:1 student-to-faculty ratio; is an award-winning national leader in engaged learning; and boasts 30 NCAA Division II national championships. It is ranked among the Top 20 Best Universities in the South by *U.S. News and World Report*; named a 2016 Top ROI College by *Forbes*; and included in The Princeton Review's 381 Best Colleges and The Fiske Guide to Colleges 2017. The College is committed to the development of the whole student through vibrant student life programs that prepare graduates to make a positive, consequential impact on society. FSC is conveniently located within an hour's drive of both Orlando and Tampa and home to the world's largest collection of Frank Lloyd Wright architecture, designated a National Historic Landmark in 2012. Named the "Most Beautiful Campus in the Nation" for two consecutive years by The Princeton Review and one of the nation's "Ten College Campuses with the Best Architecture" by *Architectural Digest*, Florida Southern is an internationally recognized place of beauty and academic excellence.

About Lakeland Regional Health

As a catalyst for community health, not-for-profit Lakeland Regional Health is reaching beyond its hospital walls to promote wellness, education and discovery in new places and new ways, providing a wide range of inpatient and outpatient healthcare services at its Medical Center, Health Carol Jenkins Barnett Pavilion for Women & Children, Hollis Cancer Center and ambulatory care locations. LRH holds Most Wired Advanced and Most Wired status for 2015-2017 from American Hospital Association's Health Forum and the College of Healthcare Information Management Executives and has earned workplace awards from *Forbes*, Gallup and *Becker's Hospital Review*. Its 864-bed comprehensive tertiary referral hospital, Lakeland Regional Health Medical Center, operates a Level II Trauma Center, a Level II Neonatal Intensive Care Unit, the Bannasch Institute for Advanced Rehabilitation Medicine and the nation's busiest single site Emergency Department. For more information about Lakeland Regional Health, visit <http://myLRH.org>.

NAACLS's Description of Entry Level Competencies of the Medical Laboratory Scientist

At entry level, the medical laboratory scientist will possess the entry level competencies necessary to perform the full range of clinical laboratory tests in areas such as Clinical Chemistry, Hematology/Hemostasis, Immunology, Immunohematology/Transfusion medicine, Microbiology, Molecular Pathology, Urine and Body Fluid Analysis and Laboratory Operations, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms.

The medical laboratory scientist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed or performed.

At entry level, the medical laboratory scientist will have the following basic knowledge and skills in:

- A. Application of safety and governmental regulations and standards as applied to clinical laboratory science;
- B. Principles and practices of professional conduct and the significance of continuing professional development;
- C. Communications sufficient to serve the needs of patients, the public and members of the health care team;
- D. Principles and practices of administration and supervision as applied to clinical laboratory science;
- E. Educational methodologies and terminology sufficient to train/educate users and providers of laboratory services;
- F. Principles and practices of clinical study design, implementation and dissemination of results.

Admission Requirements

All requirements are included in the Florida Southern College Academic Catalog. If there are any discrepancies, the Academic Catalog supersedes any information listed here. Therefore, students are encouraged to consult with the Academic Catalog to confirm these requirements.

Admission Procedure

Enrollment in the MLS major is restricted to six students per year. There are three entry pathways into the MLS pre-certification program:

Direct Entry Applicants

High school students may declare the MLS major on their admissions application, as long as they have been admitted to the College and, at a minimum, have an SAT score of 1180 or ACT score of 24.

Students entering FSC with more than 30 hours of *total* coursework are strongly encouraged to meet with the MLS director, Dr. Morvillo, prior to selecting the MLS degree to ensure timely degree progression.

Internal Transfer Applicants

Students currently enrolled at Florida Southern in different major may apply for a change of major into the MLS program. Students must meet all requirements for direct entry, have met or will meet all prerequisite course requirements, and have an overall GPA of 3.0 with a C or better in all major and prerequisite courses. The dean of the School of Arts and Sciences and the MLS director will review all internal and external applicants and make a final decision for a change in major based on merit and available space in the program. There is no guarantee for transfer into the MLS major from other majors even if the student meets academic eligibility.

Note: A student requesting an internal transfer to the MLS major is required to make an appointment with the MLS director prior to the conclusion of fall semester. This would be for consideration of the transfer request to the MLS major being approved for the following academic year.

External Transfer Applicants

To apply for admission to the MLS program, a transfer student must first be admitted to the College and, at minimum, should meet the following academic criteria:

1. Overall college GPA of 3.0 for completed courses received as transfer credits.
2. Completion of at least four prerequisite courses including BIO 1500, CHE 1111 and CHE 1112 all with a grade of C or higher.

Application deadline for the MLS program is March 1 for the following fall semester. If admitted to the MLS program, students should maintain an overall Florida Southern
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GPA of 3.0 and a final grade of C or better in all MLS major and prerequisite courses. Students who are unable to maintain the required GPA and these eligibility standards may be unenrolled from the MLS program.

Notification of Acceptance

The accepted applicant receives a letter notifying him/her of the admissions committee decision. Once the applicant confirms his/her desire to enter the program, he/she will receive further information describing the clinical year of professional studies at Lakeland Regional Health.

Special Requirements

- ❖ All pre-certified MLS students are required to participate in clinical laboratory experiences at off-site locations. Each student is responsible for obtaining reliable transportation to the clinical laboratory sites. Students may be assigned laboratory rotations on weekends.
- ❖ Each pre-certified MLS student is required to complete a criminal background screening, including fingerprinting, prior to starting the first clinical laboratory course. Note: Any student with a prior arrest or conviction history may be denied entry into the MLS program due to our agency contract agreements. Students who apply to the MLS program with a prior criminal background check must be further screened by the Program Director and approved by the dean of the School of Arts and Sciences and the MLS Program Director prior to acceptance into the MLS pre-certification program. Failure to disclose prior criminal history on application or report any subsequent criminal arrest after enrollment at Florida Southern College to the dean of the School of Arts and Sciences and the MLS Program Director may disqualify the student from the MLS program.
- ❖ Each MLS student is required to complete a ten-panel drug screen prior to starting the first clinical laboratory experience. Any student may be requested to repeat the urine drug screen as required by any clinical site or as part of a drug testing program. The cost of the background check and drug screenings is the responsibility of the student. Note: Students who have a positive drug test may be denied acceptance into the MLS program or be unenrolled from the MLS program.
- ❖ A blanket student liability insurance policy will cover all MLS students for the time he or she is working in a clinical site as part of a supervised laboratory experience. The student will be billed the annual fee (estimate \$20).
- ❖ Each MLS student is required to apply for and obtain a trainee license with the state prior to beginning the first clinical rotation.
- ❖ Each MLS student is required to provide proof of immunization prior to entering any clinical laboratory. The following are required:
 - a. Mantoux tuberculin test (2-step method if more than one year has passed since the last Mantoux tuberculin test)

- b. Measles/Mumps/Rubella (MMR) titers
 - c. Hepatitis B titer
 - d. Hepatitis C titer
 - e. Varicella titer
 - f. Pertussis (Tdap booster within past 10 years) vaccination record
 - g. Tetanus booster every 10 years
 - h. Annual flu vaccine
 - i. Health statement of physical fitness from health care provider stating student may participate in clinical experience assignments
- ❖ The student is responsible for all related costs for immunization. No student will be allowed to begin clinical laboratory experiences until all immunizations or proof of immunity (titers) has been submitted to the MLS director.
 - ❖ Students who have positive antibodies for Hepatitis C or HIV or other chronic infective diseases that may compromise patient safety, must be further screened and counseled. Because students will have direct contact with patients during the course of their clinical assignments in hospitals and other care settings, specific safeguards or other restrictions to practice may be imposed on the student to protect patients and themselves. The clinical agencies will have final say whether infected students can practice or attend clinical assignments.

Progress Requirements

All MLS majors must earn a grade of C or better in all required coursework for the major and maintain a minimum GPA of 3.0 each semester. Failure to meet these criteria may result in students being unenrolled from the MLS program. Because MLS students will participate in direct patient contact in hospitals and other health care settings, there is an expectation of a high standard of conduct and professional behavior for all students. Students who do not maintain the expected level of academic and professional performance may be unenrolled from the MLS program.

Mid Degree check for the Medical Laboratory Sciences (MLS) Bachelors of Science degree
To be completed by December 20th of a student's third semester

Name: _____ Date: _____

Home Address: _____

Phone: _____ Email: _____

Faculty Advisor: _____

Semester/year of Matriculation to FSC: _____ Anticipated semester/year of Graduation from FSC: _____

Current overall GPA _____ Current science and math GPA _____

Please complete the following chart with the courses you have already completed AND the courses you plan to take to complete your degree. You may also recreate this chart on a separate sheet of paper, if needed.

Fall 20____	Spring 20____	Summer 20____
<i>Total: ____ credits</i>	<i>Total: ____ credits</i>	
Fall 20____	Spring 20____	Summer 20____
<i>Total: ____ credits</i>	<i>Total: ____ credits</i>	
Fall 20____	Spring 20____	Summer 20____
MLS 3100 Introduction to CLS (3)	MLS 3300 Phlebotomy (3)	
<i>Total: ____ credits</i>	<i>Total: ____ credits</i>	<i>Total: ____ credits</i>
Fall 20____	Spring 20____	Summer 20____
MLS 3200 Clinical Chemistry and Immunology (3) MLS 4100 Clinical Hematology (3) MLS 4200 Clinical Immunohematology (3) MLS 4300 Clinical Hemostasis, Urinalysis and Body Fluids (2) MLS 4400 Clinical Microbiology (3) <i>Total: 14 credits</i>	MLS 4500 Molecular Pathology Methods (1) MLS 4800 MLS Practicum (8) MLS 4900 MLS Capstone (4) <i>Total: 13 credits</i> Graduation! Complete ASCP Exam	

I attest the information in this application is true and accurate.

Signature

Date

Complete the following on a separate sheet and attach to the application:

1. Include a personal statement of no more than 500 words on your experiences as an MLS major, and what motivates you to continue this career track. Include how your education is helping you in this capacity, any contact you have had with medical laboratory scientists, any tours you have taken of clinical facilities, etc.
2. Include a current unofficial transcript from Florida Southern College.

Submit the degree check by December 20 to

Dr. Nancy Morvillo

Professor and Chair of Biology and Pre-Medical Studies Coordinator

Florida Southern College

111 Lake Hollingsworth Dr.

Lakeland, FL 33801

863-680-6240

nmorvillo@flsouthern.edu

Certification & Licensure

Trainee License:

All students must apply for and obtain a Board of Clinical Laboratory Personnel Trainee License from the State of Florida Department of Health prior to beginning their clinical rotations in their final semester. The cost of the license is \$45.

Certification Licensing:

It is the responsibility of each student to make every effort to complete the full internship. Academic credit is awarded ONLY upon completion of the entire course of study.

Upon successful completion of all required coursework, students are granted a baccalaureate degree from the college in Medical Laboratory Sciences. They are then eligible to take national certification exams, such as the American Society of Clinical Pathologists (ASCP) Board of Registry or the American Association of Bioanalysts (AAB) and are also eligible for licensure as a Clinical Laboratory Technologist in the State of Florida. **Awarding the MLS degree is not contingent upon passing external licensure or certification examinations.**

National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)

5600 N. River Rd.

Suite 720

Rosemont, IL 60018-5119

847-939-3597

773-714-8880

773-714-8886 (FAX)

info@naaccls.org

State of Florida

Department of Health

Board of Clinical Laboratory Personnel

P.O. Box 6330

Tallahassee, FL 32314-6330

Phone: (850) 245-4355

www.floridasclinicallabs.gov/

American Society for Clinical Pathologists (ASCP)

33 W. Monroe, Suite 1600

Chicago, Illinois 60603

Phone: (800) 267-2727 or 312-541-4999

www.ascp.org

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Curriculum

A maximum of six students are accepted yearly with classes typically beginning in early August and ending in late April. MLS coursework consists of both practical laboratory experience and didactic lectures. Examinations are given on both the practical training and didactic material. To be eligible for certification as a medical technologist at the end of the year, a minimum passing score of 70% (C) must be maintained.

The curriculum consists of scheduled formal didactic lectures, rotation through assigned departments for practical training, assigned projects, formal and informal discussions, reading assignments, reviews and examinations. Final grades are calculated using both theoretical and practical grades.

The normal school day of didactic coursework may consist of an eight (8) hour day (excluding 1/2 hour for lunch), Monday through Friday. Didactic theory courses are instructor-led and may be partially web-based. Therefore, hybrid coursework may be completed at home at the discretion of the instructor. Lab coursework related to each didactic theory course will be completed within the clinical lab during the regular school day. All students will attend any assigned formal didactic lectures. A master lecture schedule (that will have topics and references) will be provided at the beginning of the program. Since the lecture schedule is subject to change, a monthly schedule will be provided to each student. Final examinations for each didactic course will be given. Any student absent on a scheduled exam day must have a valid excuse, and will be expected to take the exam within 7 days of the completion of the course or receive a zero (F) for the exam. All laboratory practical examinations, quizzes, review exams and other assignments must be completed before the student may take the final exam for the didactic course.

After completion of the fall term and required didactic coursework, students will be assigned to the clinical practicum. The program guarantees that students will be placed in all rotations as long as the student remains in good academic standing. The 15-week practicum is 40 hours per week, Monday through Friday. During the clinical rotation, they typical schedule will be 7:00am to 4:00pm. However, students may be asked to modify the schedule to complete certain laboratory experiences. One-on-one practical and theoretical instruction by qualified medical laboratory scientists is given as each student rotates through the various laboratory sections. Clinical placement is always included in the schedule at the beginning of the year. Each student will rotate through the laboratory departments according to his/her own schedule.

Each rotation is self-contained. Students receive a rotation syllabus which contains rotation objectives and assignments, study guides, and checklists of required skills. Practical and written exams will be given in each rotation.

A comprehensive exam for the clinical semester will be required prior to graduation. Grading for the comprehensive exam will be on a pass/fail basis. Students must attain a minimum score of 60% in each section of the exam for successful completion of the program. Students failing the comprehensive exam will be given additional study time and an opportunity to take one comprehensive make-up exam. Students must achieve a passing grade of 60% or better on the make-up exam in order to fulfill graduation requirements.

Medical Laboratory Science Major Requirements

A. General Education Requirements.....40 hours

B. Major Requirements.....84 hours

- BIO 1500 Biology I: Biological Essentials
- BIO 1501 Current Perspectives in Biology (FTC only)
- BIO 2215 Human Anatomy and Physiology I
- BIO 2216 Human Anatomy and Physiology II
- BIO 3710 Microbiology
- BIO/CHE 3362 Biochemistry: Molecular Biology
- BIO 3850 Parasitology
- BIO 4300 Immunology
- CHE 1111 Principles of Chemistry I
- CHE 1112 Principles of Chemistry II
- CHE 2231 Organic Chemistry I
- CHE 2251 Organic Chemistry I lab
- CHE 2222 Organic Chemistry II
- CHE 2252 Organic Chemistry II lab
- MAT 2032 Biostatistics **or**
- MAT2022 Elementary Statistics **and**
- MAT 2027 Transition to Biostatistics
- MLS 3100 Introduction to Clinical Laboratory Sciences
- MLS 3200 Clinical Chemistry and Immunology
- MLS 3300 Phlebotomy
- MLS 4100 Clinical Hematology
- MLS 4200 Clinical Immunohematology
- MLS 4300 Clinical Hemostasis, Urinalysis and Body Fluids
- MLS 4400 Clinical Microbiology
- MLS 4500 Molecular Pathology Methods
- MLS 4800 Medical Laboratory Science Practicum
- MLS 4900 Medical Laboratory Science Capstone

C. Bachelor of Science Degree Requirements.....12 hours

D. Electives.....0 hours

E. Total.....134-137 hours

Suggested Medical Laboratory Sciences B.S. Major Four Year Plan

<u>Fall year 1</u>	<u>Spring year 1</u>
BIO 1500 – Biology I: Biological Essentials (4-Natural World/Major) BIO 1501 – Current Perspectives in Biology (FTC only) (1- Major) CHE 1111 – Principles of Chemistry I (4-Major) ENG 1005 or HON 1700 (4-Effective Communication A) SOC 1100 (4-Social World) <i>Total: 17 credits</i>	BIO 2215 – Human Anatomy and Physiology I (4- Major) CHE 1112 – Principles of Chemistry II (4-Major) MAT 2032 – Biostatistics (4- Quantitative/Major) COM 1500 or HON 1701 (4-Effective Communication B) <i>Total: 16 credits</i>
<u>Fall year 2</u>	<u>Spring year 2</u>
BIO 2216- Human Anatomy and Physiology II (4-Major) CHE 2221 – Organic Chemistry I (3-Major) CHE 2251 – Organic Chemistry I Lab (1-Major) Quantitative Course (4-BS requirement) PSY 1106 (4-Social World) <i>Total: 16 credits</i>	BIO 3850 Parasitology (4-Major) CHE 2232 – Organic Chemistry II (3-Major) CHE 2252 – Organic Chemistry II Lab (1-Major) PED 1005 – Wellness Management (2-Personal Wellness) PHI 1109 – What is Philosophy (4-Meaning & Value/Qualitative) Elective (4) <i>Total: 18 credits</i>
<u>Fall year 3</u>	<u>Spring year 3</u>
BIO 3710 – Microbiology (4- Major) THE 1050 – Introduction to the Theater (4-Fine Arts) MLS 3100 Introduction to Clinical Lab Sciences (3- Major) PSY 2209 or PSY 2214 or PSY 3309 (4-BS Social Science Requirement) <i>Total: 15 credits</i>	BIO 3362 – Biochemistry: Molecular Biology (4-Major) BIO 4300 Immunology (4-Major) MLS 3300 Phlebotomy (3-Major) MLS 4100 Clinical Hematology (3- Major) PHI 2204 – Ethics (4-Meaning and Value) <i>Total: 18 credits</i>
<u>Fall year 4</u>	<u>Spring year 4</u>
MLS 3200 Clinical Chemistry and Immunology (3- Major) MLS 4200 Clinical Immunoematology (3-Major) MLS 4300 Clinical Hemostasis, Urinalysis and Body Fluids (2- Major) MLS 4400 Clinical Microbiology (3- Major) MLS 4500 Molecular Pathology Methods (1-Major) <i>Total: 12 credits</i>	MLS 4800 MLS Practicum (8- Major) MLS 4900 MLS Capstone (4- Effective Communication C/Major) <i>Total: 12 credits</i>

Parenthesis indicate number of credit hours for the course and the graduation requirement fulfilled by the course.

MLS Course Descriptions

MLS 3100 Introduction to Clinical Laboratory Science

Three hours: Prerequisite: Medical Laboratory Sciences majors. Co-requisite or prerequisite: BIO 3710. Basic aspects of clinical laboratory sciences are covered, including general clinical laboratory safety, proper use and care of laboratory equipment, an overview of clinical laboratory tests, administrative aspects of clinical laboratory work, and educational and career requirements for the MLS professional.

Course Student Learning Outcomes:

- Demonstrate knowledge of correct laboratory safety procedures for the clinical laboratory.
- Demonstrate knowledge of correct use and maintenance of basic clinical laboratory equipment.
- Explain the necessary quality assurance and quality control aspects of a clinical laboratory.
- Identify important parameters of basic health care and clinical testing procedures.
- Identify educational and career requirements necessary for the MLS professional.

MLS 3200 Clinical Chemistry and Immunology

Three hours: Prerequisite: Medical Laboratory Sciences majors and BIO 4300. Prerequisite or co-requisite: MLS 3100. Explore critical chemical and immunological concepts for the medical laboratory sciences professional.

Course Student Learning Outcomes:

- Demonstrate proficiency in chemical calculations needed for clinical chemistry.
- Describe clinical chemistry and immunological methodologies used for the diagnosis of health conditions.
- Demonstrate knowledge of the anatomical, physiological and chemical functions of the body which contribute to various states of health and disease.
- Demonstrate knowledge of the correct use and maintenance of basic instrumentation necessary for clinical chemistry and immunology.
- Explain the clinical significance of biochemical macromolecules and other markers in the diagnosis of health conditions.

MLS 3300 Phlebotomy

Three hours: Prerequisite: Medical Laboratory Sciences major. Prerequisite or co-requisite: MLS 3100. Study various aspects of phlebotomy, including the conceptual, procedural, legal and ethical aspects of working with specimens, samples and patients.

Course Student Learning Outcomes:

- Delineate appropriate safety procedures for working with patients and blood samples.
- Demonstrate appropriate techniques for specimen and sample collection.
- Demonstrate knowledge of the appropriate materials and protocols for testing samples and specimens.
- Identify effective communication skills necessary to obtain vital information from patients.
- Explain professional, legal and ethical aspects of patient care.

MLS 4100 Clinical Hematology

Three hours: Prerequisite: MLS 3100. A detailed exploration of structure, function and disorders of hematopoietic cells and tissues.

Course Student Learning Outcomes:

- Demonstrate knowledge of the correct use and maintenance of basic instrumentation necessary for clinical hematology.
- Explain the clinical significance of hematology tests in the diagnosis of health conditions.
- Describe hematology test methods used for the diagnosis of health conditions.
- Demonstrate knowledge of the hematopoietic system and the role of hematopoiesis in various states of health and disease.
- Describe flow cytometry test methods and bone marrow analysis as used for the diagnosis of health conditions.

MLS 4200 Clinical Immunohematology

Three hours: Prerequisite: MLS 3100 and BIO 4300. A detailed exploration of the processes of blood donation and transfusion, with emphasis on detection and analysis of blood components and disease states.**Course Student Learning Outcomes:**

- Identify the clinical aspects of blood donations and transfusions.
- Describe the preparation and storage of blood components.

- Identify appropriate testing protocols for blood antigens, antibodies, compatibility, and disease states.
- Describe appropriate quality controls and regulations for blood banks.

MLS 4300 Clinical Hemostasis, Urinalysis and Body Fluids

Two hours: Prerequisite: MLS 3100. A detailed exploration of structure, function and disorders of thrombopoietic cells and kidney and urinary structure and function, with emphasis on testing procedures for coagulation, urine and other body fluids.

Course Student Learning Outcomes:

- Demonstrate knowledge of the correct use and maintenance of basic instrumentation necessary for coagulation testing.
- Explain the clinical significance of coagulation tests in the diagnosis of health conditions.
- Describe the structure and function of the urinary system.
- Identify aspect of renal and extrarenal diseases.
- Describe basic methods and tests involved in urinalysis and kidney function.
- Describe basic methods and tests involved in analysis of other body fluids.

MLS 4400 Clinical Microbiology

Three hours: Prerequisite: MLS 3100 and BIO 3710. Explore the basic morphology and biochemical characteristics of clinically significant microorganisms, along with appropriate testing procedures for detection in patient samples.

Course Student Learning Outcomes:

- Describe the roles of the clinical microbiology laboratory.
- Describe the biology of clinically significant microorganisms, including bacteria, fungi, viruses, and parasites.
- Describe methodology used to identify clinically significant microorganisms.
- Identify appropriate safe laboratory procedures for infection control.

MLS 4500 Molecular Pathology Methods

One hour: Prerequisite: MLS 3100 and BIO 3362. The concepts and methods behind modern molecular clinical testing are explored.

Course Student Learning Outcomes:

- Explain the basic structure of DNA, including chromosomal morphology.

- Identify molecular techniques to analyze mutations in DNA, including PCR and sequencing.
- Describe appropriate laboratory operations, including quality control, for a molecular pathology laboratory.

MLS 4800 Medical Laboratory Sciences Practicum

Eight hours: Prerequisite: MLS 3100 and MLS 4400. Application of medical testing concepts to laboratory settings. Students will rotate through multiple laboratory facilities in a clinical setting to gain experience in the methods and procedures needed for the Medical Laboratory Science professional.

Course Student Learning Outcomes:

- Demonstrate appropriate procedures for common clinical tests.
- Analyze results of common clinical lab tests.
- Determine appropriate methods for common clinical lab tests.
- Demonstrate proper safety procedures in clinical lab settings.

MLS 4900 Medical Laboratory Sciences Capstone

Four hours: Prerequisite: MLS 3100 and MLS 4400 and successful completion of coursework that satisfies Effective Communication SLOs A and B. Students will consider special topics in Medical Laboratory Sciences, which may include case study analysis, interpretation of information and consideration of new technologies. Students will perform literature and/or laboratory research, and will present their findings in oral and written formats. *Gen Ed: EC-C*

Course Student Learning Outcomes:

- Demonstrate competency in oral and written communication.
- Analyze primary literature pertinent to the MLS professional.
- Gather data for an original research project.
- Synthesize information pertaining to the research project.

Academic Policies

All academic policies pertaining to admissions, fees, financial aid, advising, course loads, withdrawals, disability services, discrimination, FERPA, etc. may be found in the Florida Southern College catalog.

Modifications to Policy:

- ❖ The Medical Laboratory Sciences Professional and Academic Standards Committee reserves the right to make modifications to the MLS policies.
- ❖ Policies take effect on the date of approval by the committee.
- ❖ Notification of the new policies will be posted to the MLS website within five working days of their approval.

General Policies

- A. Students are expected to attend 100% of all MLS classes.
- B. Students are expected to complete lessons, assignments, quizzes and exams according to the course schedule, syllabus and/or calendar. If an emergency or illness occurs that prohibits the students from accomplishing the above, it is the student's responsibility to contact the instructor (in person or by telephone, voicemail or email) prior to the absence.
- C. It is the student's responsibility to read and obtain notes or course materials from other students after an absence. Each instructor reserves the right to determine how they will incorporate lessons, assignments, quizzes, and/or exams not completed into the student's final grade.
- D. It is the instructor's decision to allow or not allow any make-up of lessons, laboratory experiences, assignments, quizzes and/or exams.
- E. Student class attendance will be verified by the completion of class assignments or participation evaluation. Class attendance records may be reviewed as part of determining the affective portion of the student's evaluation which counts in their overall grade according to the instructor's discretion. If an absence is lengthy, the student may not receive credit and must repeat the course the next time it is offered.
- F. Tardiness will not be tolerated and will be reflected on affective evaluation forms. Each instructor will inform the student how tardiness will be incorporated into the course grade. Promptness is also expected following breaks in either lecture or laboratory experiences.
- G. Format of make-up exams may differ from the original exam delivered in class. The format of the make-up exam will be determined by the course instructor.
- H. Use of any electronic devices is not allowed during any quiz or exam both in lecture and laboratory experiences (except approved calculators) unless approved by the instructor of the course.

- I. Cell phones must be turned off during all lectures, quizzes, exams and laboratory experiences.

Academic Performance:

The grades for each course will be determined using the following sources:

Cognitive:	Quizzes, Case Study, Exams
Psychomotor:	Performance Evaluation
Affective:	Performance Evaluation/Affective Evaluation

- A. Cognitive Performance Evaluation: A satisfactory grade of C or better must be attained on the accumulation of points for quizzes and exams for each theory course.
- B. Psychomotor: A satisfactory grade of C or better must be attained on the accumulation of points for the performance evaluation for each course (theory course with lab and clinical practicum). Failure to obtain an overall grade of C or better for any rotation will result in the student being placed on probation for the remainder of the clinical practicum.
- C. Critical Objectives: All critical objectives in each course must be successfully performed. If any critical objective is not successfully completed, the student MUST remediate the failed critical objective. Any student who has failed any critical objective needs to refer to the section on Remediation for specific guidelines. Failure to obtain successful completion of any critical objective in any course will result in the non-probationary student being placed on probation for the remainder of the course. Please see the section on Probation for specific guidelines.
- D. Clinical Objectives: As part of the practicum performance evaluations, the student must receive a passing score to successfully complete each clinical objective. Any score below passing on any clinical objective is considered a failing score for that portion of the practicum.
- E. Affective Performance Evaluation: A satisfactory grade of C or better must be attained on the evaluation for each rotation in the practicum. Failure to obtain a satisfactory grade or better for any rotation will result in the student being placed on probation for the remainder of the practicum.

Probation Policy

A student will be placed on probation under any of the following circumstances:

- A. A student fails to successfully complete a cognitive course (mid-term and final exams), a performance evaluation (bench), a critical objective, or the affective performance evaluation as outlined above.
- B. A student lacks professional conduct such as:
 - a. Disregard for the patient's rights to confidentiality and privacy according to HIPAA legislation.
 - b. Disregard for good, quality patient care (inconsistent or inaccurate work, consistent careless attitude with patients).
 - c. Failure or inability to adhere to MLS departmental or LRH policies.
 - d. Failure to demonstrate academic honesty and integrity: The FSC MLS program abides by the FSC Student Handbook which includes the procedure for student dismissal related to academic dishonesty and failure to comply with stated rules relating to substance abuse.
- C. A student who does not adhere to State of Florida Guidelines: Students are licensed as trainees by the State of Florida, and grounds for disciplinary action against clinical laboratory personnel as stated in Florida Statute 483.825 (listed below) will be grounds for disciplinary and/or legal action against the student.
The following constitute grounds for disciplinary actions:
 - a. Attempting to obtain, obtaining, or renewing a license or registration under this part by bribery, by fraudulent misrepresentation, or through an error of the department or the board.
 - b. Engaging or attempting to engage in, or representing himself as entitled to perform, any clinical laboratory or category of procedures not authorized pursuant to his license.
 - c. Demonstrating incompetence or making consistent errors in the performance of clinical laboratory examinations procedures or erroneous reporting.
 - d. Performing a test and rendering a report thereon to a person not authorized by law to receive such services.
 - e. Having been convicted of a felony or any crime involving moral turpitude under the laws of any state or of the United States. The record of conviction or certified copy thereof shall be conclusive evidence of such conviction.
 - f. Having been adjudged mentally or physically incompetent.
 - g. Violating or aiding and abetting in the violation of any provision of this part or the rules adopted hereunder.
 - h. Reporting a test result when no laboratory test was performed on a clinical specimen.
 - i. Knowingly advertising false services or credentials.

- j. Having a license revoked, suspended, or otherwise acted against, including the denial of licensure, by the licensing authority of another jurisdiction. The licensing authority's acceptance of a relinquishment of a license, stipulation, consent order, or other settlement, offered in response to or in anticipation of the filing of administrative charges against the licensee, shall be construed as action against the license.
- k. Failing to report to the board, in writing, within 30 days if action under subsection (10) has been taken against one's license to practice as clinical laboratory personnel in another state, territory, or country.
- l. Being unable to perform or report clinical laboratory examinations with reasonable skill and safety to patients by reason of illness or use of alcohol, drugs, narcotics, chemicals, or any other type material or as a result of any mental or physical condition. In enforcing this paragraph, the department shall have, upon a finding of the secretary or his or her designee, that probable cause exists to believe that the licensee is unable to practice because of the reasons stated in this paragraph, the authority to issue an order to compel a licensee to submit to a mental or physical examination by physicians designated by the department. If the licensee refuses to comply with such order, the department's order directing such examination may be enforced by filing a petition for enforcement in the circuit court where the licensee resides or does business. The department shall be entitled to the summary procedure provided in s.51.011. A licensee affected under this paragraph shall at reasonable intervals be afforded an opportunity to demonstrate that he or she can resume competent practice with reasonable skill and safety to patients.
- m. Delegating professional responsibilities to a person when the licensee delegating such responsibilities knows, or has reason to know, that such person is not qualified by training, experience, or licensure to perform them.

A student on probation may be dismissed from the Medical Laboratory Science program if the student fails a subsequent didactic and/or practical work area. As a result the student will not receive a BS degree in Medical Laboratory Science, nor be eligible for the ASCP Board of Certification (BOC) examination.

Remediation

Remediation in course will be determined by the Program Director.

- A. A student will be allowed one remediation total.
 - a. A student may remediate any one area: cognitive, psychomotor including a single critical objective, or affective area.
 - b. The student must successfully complete remediation to continue in the program. Failure to successfully remediate an identified area will result in program dismissal.
- B. Cognitive Remediation:
 - a. Failure to obtain a passing score will result in remediation of the course content. The Program Director will work with the student to establish remediation of the course content.
 - b. If a passing score is achieved, the grade issued will be no higher than a grade of C.
- C. Psychomotor/Affective Remediation: Credit for unsatisfactory performance may be earned by satisfactorily completing one of the following:
 - a. Additional days in the department where the unsatisfactory performance was achieved. Additional clinical experience time will be scheduled at the discretion of the department supervisor and the Program Director. Documentation of the remediation goals and evaluations will be discussed with the Program Director, the department supervisor, and the student.
 - b. Complete repetition of the entire departmental rotation may be deemed necessary. This will be completed at the end of the clinical practicum and a grade of incomplete will be assigned until all course requirements are met. The student would not be eligible for graduation or to sit for the ASCP Board of Certification (BOC) examination until successful remediation has occurred.
 - c. If a passing score is achieved, the grade issued will be no higher than a grade of C.
 - d. If remediation requires additional time spent on the bench the student must submit, in writing, to the Program Director goals to identify the adjustments that will be made by the student to achieve a satisfactory performance evaluation.
- D. Conditions: A student on probation will remain in the program if all of the following are met:
 - a. The student continues to successfully complete and pass all subsequent coursework.
 - b. The student resolves the failure with remediation.
 - c. The student maintains the specific expectations listed on the signed probation letter.

Program Dismissal

All dismissal/termination policies from FSC apply to the MLS program and the clinical practicum at LRH. The following are additional grounds for immediate program termination in the clinical practicum portion of the program.

- A. Academic Dismissal:
 - a. Failure to meet probation specifications
 - b. A failing score following one successful remediation
- B. Lack of Professional Student Conduct:
 - a. Disregard for the patient's rights to confidentiality and privacy according to HIPAA legislation.
 - b. Disregard for good, quality patient care, inconsistent or inaccurate work, or consistent careless attitude with patients.
 - c. Failure or inability to adhere to MLS departmental or LRH policies.
 - d. Academic dishonesty and failure to comply with stated FSC rules relating to substance abuse.
- C. Drug Screen:

Any student may be subject to a drug of abuse screen prior to or during a clinical rotation at a medical center. Any student who tests positive for drugs of abuse will be removed from the clinical experience and will not be allowed to complete the required courses to earn a BS in Medical Laboratory Sciences.

Cheating

Cheating of any kind may result in immediate dismissal. This policy includes all work performed, including exams, quizzes, worksheets, laboratory tests, case histories, projects, etc.

Communication

FSC/MLS communication will only be done by the FSC email address. It is the student's responsibility to maintain their most current email address and mailing address.

Professional Organizations

Students are encouraged to join the American Society of Clinical Laboratory Science (ASCLS) or the American Society for Clinical Pathology (ASCP) at a reduced student rate. These societies promote the medical laboratory science profession and provide opportunities for professional growth. Other organizations of interest are:

- ❖ American Association of Blood Banks (AABB)
- ❖ American Association for Clinical Chemistry (AACC)
- ❖ American Society for Microbiology (ASM)
- ❖ Clinical Laboratory Management Association (CLMA)
- ❖ American Association for Hematology

Information may be located via organization websites.

LRH General Policies

Clinical rotations are designed on the needs and requirements of the students and the laboratory.

The clinical rotations offered to our students during their internship include:

- ❖ Core Laboratory- located on 5D. Chemistry, Immunochemistry, Hematology Coagulation, Urinalysis, Point of Care Testing, and Specimen Processing
- ❖ Microbiology- located on 3 NORTH. Microbiology and Molecular Diagnostics
- ❖ Anatomical Pathology located on 5D. Flow Cytometry, Molecular Diagnostics
- ❖ Phlebotomy experience is offered through our outpatient draw sites (ambulatory clinic sites).
- ❖ In addition, our laboratory encourages students to participate in professional topic presentations, as a means of fulfilling any additional requirements.

Schedules are provided to the student prior to their rotation through the laboratory. All attempts will be made to accommodate individual needs.

Dependability and reliability are important characteristics of laboratorians, and students are expected to be present and on time. Excessive absenteeism will be discussed with the school's Program Director.

It is the policy of Lakeland Regional Medical Health that students do not replace the scientist at the workplace. When students are learning or performing procedures, they will be under the direct supervision of a scientist or instructor.

General Conduct

Students are expected to read and adhere to the LRH Orientation Handbook and adhere to all policies detailed in this document.

Students are expected to demonstrate responsible professional behavior at all times. Students must be aware and recognize that their courses are being conducted in the professional environment of a hospital. Nonprofessional conduct such as rudeness, excessive noise, throwing items, verbal or physical fighting, etc. is totally inappropriate and subject to disciplinary measure up to and including suspension or dismissal.

Examples of infractions of conduct include:

- ❖ Reporting to work under the influence or using any intoxicant and/or illicit drugs.
- ❖ Possession of firearms, fireworks, dangerous weapons, alcohol and/or illicit drugs.
- ❖ Refusal to accept and or/perform a reasonable work assignment.
- ❖ Insubordination.
- ❖ Violation of safety rules and practices.

- ❖ Use of abusive, vulgar or threatening language.
- ❖ Nonprofessional conduct.
- ❖ Interfering with the work of other employees/students.
- ❖ Acceptance of gratuities.
- ❖ Unauthorized solicitation.

Interaction with Patients and Visitors

Every patient is an important person in the hospital. Patients depend upon medical laboratory scientists and technicians to provide care in a professional manner. The scientist's primary patient contact is in the role of phlebotomist. Guidelines for patient and visitor interaction will be covered in the phlebotomy course.

Interaction with Professional Personnel

- ❖ It is important to demonstrate proper respect and conduct when dealing with all health care professionals and other hospital employees, in person and on the telephone.
- ❖ It is important to demonstrate proper respect and courtesy to instructors and guest lecturers. These individuals will help you gain information and insight about the profession.
- ❖ It is important to demonstrate proper respect and conduct to laboratory managers, supervisors, scientists and technicians on clinical rotations and phlebotomy rounds.
- ❖ Do not allow yourself to be drawn into an argument, particularly in the presence of patients and/or visitors! If differences of opinion arise, advise individuals to discuss the matter privately with supervisory personnel, if necessary.
- ❖ Do not agree to do anything you do not know how to do or are not authorized to do. If you are questioned about laboratory requests, advise the individual to consult the specific laboratory division.

Interaction with Classmates

- ❖ Professional behavior is expected of all students whether they are in the student laboratory or the clinical lab setting.
- ❖ Courtesy, respect and patience are important qualities when interacting with classmates.

Breaks and Lunches

During the day, students will be allowed a break during the morning and/or afternoon depending on the rotational department. Students are to follow the break protocol of the department. Students must have the permission of the department Teaching Supervisor (Department Team Leaders) at the beginning of the rotation to find out their time allotments. When leaving the department for any reason, you must inform your instructor(s).

NOTE: EATING AND DRINKING ARE STRICTLY PROHIBITED IN THE TECHNICAL AREAS OF THE LABORATORY. Smoking is prohibited on the LRH campus.

Attendance & Time Off

Students must be on time for all scheduled classes and laboratory rotations. Students are required to complete a time sheet indicating in and out times for each day of the practicum rotation. Time sheets are signed by the instructor and submitted to the Program Director at the end of each month.

Holidays and Vacations: Students will be entitled to all official hospital and school holidays in the same manner as they apply to laboratory personnel.

General Time Off: In addition, students are allotted a maximum of 3 days (24 hours) of general time to be used as sick time or scheduled leave. For scheduled time off, a written request must be submitted and approved by the area supervisor and clinical coordinator. Any missed time beyond the allotted 3 days must be made up (in the department that was effected) prior to graduation in order to receive a passing grade. Attendance will be carefully monitored and tardy time or leaving early will be deducted from the allotted 3 days. Students are expected to be in their assigned rotation and ready to learn at the start time specified for that rotation.

Illness Related Absences: Should an unscheduled absence, or “calling in sick” become necessary, please notify the lab by calling (863) 687-1100 ext. 1204 at least two hours before you are scheduled to report. Identify yourself as a student, and ask to be transferred to the Charge Tech or Team Leader of the assigned rotation and report your absence to them. A message must be left with the clinical coordinator at (863) 687-1100 ext. 3179. A copy of your message will be posted with the Program Director and the rotation department in which you are scheduled. You **MUST** call in any time you will be absent unless prior approval was obtained.

Inclement Weather: In the event of inclement weather, the student must call the lab and speak to the Charge Tech or Team Leader of the assigned rotation at least ½ hour before the scheduled arrival time. Emergency notification from the LRH Intranet in regards to inclement weather do apply to students.

Tardiness

- A. Students are expected to report to the lab on time, as scheduled.
- B. Students are expected to stay onsite until dismissed by the bench instructor for the day.
- C. Asking the department supervisor to leave early is not tolerated and will follow the same protocol as chronic tardiness.
- D. Tardiness will be reflected on the professional attributes section of the performance evaluation form and will be incorporated into the overall grade for each rotation.
- E. The time missed for tardiness may be made up at the discretion of the clinical coordinator.
- F. Chronic tardiness will not be tolerated and will be dealt with in the following manner:
 - a. The Program Director will issue a verbal warning to the student. Documentation of this warning will be made in the student's file.
 - b. If tardiness continues, the Program Director will issue a written warning to the student. The student will be placed on probation and documentation will be made in the student's file.
 - c. If tardiness continues after the probation status has been issued, termination from the program will occur.

Service Work

Students are not responsible for service work in the laboratory and cannot replace an employee. Work performed by students during their time during practicum must be checked by the medical laboratory scientist. If students wish to perform service work outside of regular academic hours, it is noncompulsory, paid, supervised on site, subject to employee regulations and based on departmental staffing needs.

Parking

Student parking is by the stadium entry located next to the laundry building. Park on the grass/dirt area. No vehicle identification is required.

If you have any security questions, contact the Safety & Security Department main number at ext. #1221 (687-1221). The Security Supervisor may be reached at ext. 7222

Dress Code

- ❖ Jeans, cargo pants, capri pants, sweat shirts or sweat pants, tank tops, midriff or halter tops, and cut off shorts are NOT acceptable. Torn, faded, wrinkled or tight clothing of any type is unacceptable. Lab coats may NOT be worn over inappropriate clothing.
- ❖ Tee shirts with writing and logos are not permitted
- ❖ Scrubs are permitted- however, solid black, white, gray, peach brown or red scrubs are not permitted.
- ❖ Long sleeved shirts may be worn under scrubs if they match the uniform color.
- ❖ Conservative footwear is required. Shoes must be flat and have closed toes for safety purposes. Clean tennis shoes or sneakers are acceptable but must be of the leather or vinyl type. Hiking boots, sandals or cloth/canvas shoes are not appropriate for the laboratory.
- ❖ All appropriate undergarments and hygiene are a must. Jewelry and perfumes should be kept to a minimum. Long hair should be tied back for safety purposes. Long or dangling jewelry must not be worn for safety reasons. No hats or caps of any type may be worn, except for religious reasons.
- ❖ Tattoos and exposed piercings must be covered and acrylic nails are not to be worn in the laboratory
- ❖ Students must wear a hospital identification badge during scheduled days at the hospital. These will be provided to students during orientation.
- ❖ Students will be furnished with lab coats to wear as protection while working with patient specimens. These lab coats are to be removed when leaving the laboratory for other hospital business.

Program officials, faculty, instructors or lab managers can enforce the dress code. Students are expected to maintain a professional appearance at all times. Failure to conform to the dress code may result in the student being sent home to change into appropriate attire. A verbal warning will be given to the student with documentation on the performance evaluation. Repeat offenses of the dress code policy will result in written warning and disciplinary action up to and including dismissal from the program.

Required Information

It is the responsibility of the affiliate school/college/university to ensure the student has completed both a criminal background check as well as a 10 panel drug screen.

Customer Service and our Culture of Caring

Lakeland Regional Health was named one of thirty six recipients of the 2014 Gallup Great Workplace Award, which recognizes companies throughout the world who have achieved engagement excellence.

We Promise To:

- ❖ Treasure all people as uniquely created
- ❖ Nurture, educate and guide with integrity
- ❖ Inspire each and every one of us to do our very best

With These Promises We:

- ❖ Care for Self
- ❖ Care for our Patients and Families
- ❖ Care for Others
- ❖ Care for Community

Cultural Diversity and Sensitivity

We all differ from one another and as students in the healthcare industry; our differences can become more important due to the personal nature of the services we provide. As we work with employees and patients and their families, we need to be aware of the different beliefs and practices and be willing to create and maintain an environment that is respectful of all people.

When dealing with patients, co-workers and hospital staff please remember to always:

- ❖ Greet each person warmly and genuinely
- ❖ Display positive body language
- ❖ Offer assistance to anyone that needs your help
- ❖ Maintain confidentiality
- ❖ Recognize the diversity of your customers

HIPAA

The Health Insurance Portability and Accountability Act of 1996 is a multifaceted piece of legislation covering three areas:

- ❖ **Insurance Portability:** Portability ensures that individuals moving from one health plan to another will have continuity of coverage and will not be denied coverage
- ❖ **Fraud Enforcement (Accountability):** Significantly increases the federal government's fraud enforcement authority in many different areas.
- ❖ **Administrative Simplifications:** Ensures system-wide, technical and policy changes in healthcare organizations in order to protect patient's privacy and confidentiality of identifiable protected information (PHI).

A medical laboratory scientist has the moral, ethical, and legal responsibility to ensure the confidentiality of patient information. This means that discussion of patient information will only involve authorized personnel, at the appropriate time, and in a private place. All information should be discussed in a professional manner. Be particularly careful not to discuss patients in elevators, halls, the cafeteria or other public places where patients, relatives, visitors and other hospital employees may overhear the conversation.

Examples of infractions of confidentiality include:

- ❖ Unauthorized possession of confidential records or unauthorized use of hospital information systems.
- ❖ Disclosure of information contained in confidential records including all lab reports and medical records.

The Consequences of Breaking a HIPAA Rule

- ❖ Civil penalties can result in fines up to \$100 for each violation per individual. That means if the hospital releases 80 patient records, fines could total more than \$8,000. The annual limit per person for violating an identical requirement is \$25,000.
- ❖ Criminal penalties for knowingly disclosing PHI may include large fines as well as jail time. Criminal penalties increase as the seriousness of the offense increases.

Confidentiality and privacy mean that patients have the right to control who will see their protected health information (PHI). Communication about patient health information should be limited to those who need the information in order to provide treatment, payment, and healthcare operations.

Environment of Care

Emergency Preparedness

As a hospital, we must ALL be prepared to handle all sorts of emergencies. An emergency situation should be called to the operator by dialing “55”. Identify yourself and give the operator all pertinent information as well as the exact location of the emergency. The operator will announce the emergency code with the location using the overhead page. This will occur several times until the “all clear” has been confirmed.

Emergency Codes

- ❖ CODE 1 - Emergency code for a potential child or infant abduction. All staff need to search their departments, paying special attention to bathrooms, closets and stairwells. They should also keep their eyes and ears open for suspicious activities, such as persons walking quickly with an infant or a large bag. Any suspicious activity should be reported to Safety and Security, extension # 1221.
- ❖ CODE 2 - Called when there is a community disaster and we are receiving disaster victims. Your role in this emergency is to remain in the laboratory and follow all instructions from the designated supervisor (charge, team leader).
- ❖ CODE 3 - Suspected fire/smoke. Respond the same as with CODE 3 CONFIRMED if the fire is on the same floor, the floor above or below your present location. A CODE 3 ALL CLEAR or CODE 3 CONFIRMED will be announced by the hospital operator when the situation has been further investigated.
- ❖ CODE 3 CONFIRMED - Smoke or fire confirmed by the fire response team. Follow the steps of SAVE and PASS if in immediate department. All hallways in the hospital are cleared and all doors, windows and vents closed. Exits are monitored and visitors are calmly asked to remain in the area. All elevators are not to be used.
- ❖ Active Shooter- Active shooter in the building. Take the following steps:
 - Run: evacuate the area/department/facility if there is an accessible, safe evacuation route.
 - Hide: If unable to evacuate, hide out of the shooter’s view. Silence all phones, radios, etc. Lock and barricade doors if necessary.
 - Fight: Take action against the shooter as a last resort and only when your life is in imminent danger (shooter engages you). Attempt to disrupt or incapacitate the active shooter by acting as aggressively as possible against him or her, such as throwing items, yelling, improvising weapons. Mentally focus and commit your actions to survive.

Team Codes

- ❖ CODE 333 - Evacuation or relocation of patients, visitors and staff is necessary. Employees follow the Emergency Preparedness Plan for assignments or evacuation or relocation process.
- ❖ CODE 3 DRILL - Follow the steps of SAVE and PASS if the RED fire blanket is located in your immediate area.
- ❖ CODE 5 - Announced when Safety and Security assistance is required in subduing a disorderly or violent patient, visitor or employee on a short term emergency basis.
- ❖ CODE 5 BACKUP - Security and other trained hospital staff immediately respond to the announced area to assist or intervene as needed.
- ❖ CODE 13 - Confirmed in a hostage situation. Upon hearing the code, everyone should remain calm, report to your assigned area and wait for further instructions. Do not go to the incident location.
- ❖ CODE 14 - Called to alert the Trauma Team that a trauma patient has arrived or is expected in the Emergency Department. The Laboratory is also alerted to a trauma alert.
- ❖ CODE 55 - Chemical spill. Keep away from the immediate area and contain the spill if possible (do not attempt to clean it up). Identify the type of chemical spill and dial extension 55 for the Chemical Response Team. Staff complete an incident if an exposure occurs. Review the SDS locations.
- ❖ CODE 77 - Bomb threat. Stay calm, do not discuss with the public. Call extension 1221 to report anything suspicious.
- ❖ CODE 99- Cardiac & Respiratory Arrest (CODE 44 for pediatric). These emergencies may occur anywhere in the hospital, to a visitor, patient or fellow employee. Quickly assess the person then activate the code by dialing extension 55. Provide the operator with the code situation and location. The Code Team from the Critical Care Units will respond.
- ❖ Code 100- Any physician in house, is called when an emergency situation arises and any physician in the building and a physician is needed for quick assistance.
- ❖ Code 100 Special- Physician of special type.

Fire Safety

Basic steps for fire safety:

- ❖ Be sure to observe the NO smoking policy. There are designated areas outside of the hospital for smoking.
- ❖ Be observant and report any unsafe conditions immediately.
- ❖ Keep all fire and smoke doors clear- do not block them.
- ❖ All storage areas must have items at least 18 inches from the ceiling.
- ❖ Use good electrical safety practices.

In Case of Fire

- ❖ S = SAVE the patient, visitor or employee
- ❖ A = Keep people away from the area and pull the nearest Fire ALARM. Dial 55 and tell the operator there is a CODE 3.
- ❖ V = VENTILATION. Smoke and fire generated gases cause the majority of fatalities. Close all doors to contain the fire, smoke and gases.
- ❖ E = If the fire is small, locate the nearest fire EXTINGUISHER and attempt to extinguish the fire by following the steps of PASS

PASS

- ❖ Pin, when you bring the extinguisher to the scene, pull the locking pin
- ❖ Aim the extinguisher nozzle at the base of the flame
- ❖ Squeeze the extinguisher handles together
- ❖ Spray or sweep from side to side of the fire. Evenly coat the fire.

General Infection Control Guidelines

All students need to follow caution during their clinical activities. These include:

- ❖ Compliance with hospital and department specific dress code requirements including PPE equipment while in the laboratory.
- ❖ Avoid touching eyes or mouth during specimen and patient contact.
- ❖ No eating, drinking, applying make-up or personal hygiene products in the laboratory or where patient activities or contact with contaminated equipment or surfaces occur.
- ❖ Compliance with Hospital guidelines for Standard Precautions and Safety.
- ❖ If you are ill, or present with a fever, consult with laboratory before coming to work. The laboratory office phone # is 1-863-284-1871.
- ❖ If you should have a blood borne pathogen exposure (needle stick, mucous membrane exposure) report immediately to your instructor/supervisor for the proper procedure.

Hand Hygiene Procedure

Hands must be washed with the hospital approved anti-microbial agent.

- ❖ Turn on hot and cold faucets to obtain warm water
- ❖ Place hands under the water stream and thoroughly wet hands
- ❖ Dispense liquid antimicrobial soap on the palm of the hand
- ❖ Vigorously rub hands together, covering all surfaces, for at least 20 seconds
- ❖ Rinse hands under stream of water
- ❖ Dry hands thoroughly with paper towel
- ❖ Turn off faucets with paper towel and open door with dry paper towel

If hands are not visibly soiled, an alcohol based hand rub may be used for routinely decontaminating hands

- ❖ Dispense antiseptic solution together, covering all surfaces including nail and skin junctures
- ❖ Allow hands to air dry- approximately 15 to 25 seconds
- ❖ Follow with an approved moisturizing lotion

Waste Disposal

Waste disposal in the Laboratory is accomplished with the following receptacles:

- ❖ Biohazardous or Biomedical Waste- biomedical waste, except for sharps, These are packaged and sealed in red bags. They will have the biomedical waste symbol.
- ❖ Sharps- substances that can poke or cut the skin. All sharps should be handled and disposed of carefully. All sharps for disposal are placed in approved puncture resistant sharps container. It is clearly labeled and is considered full when it reaches the $\frac{3}{4}$ level.
- ❖ Green Lined Receptacle- re-cycled material.
- ❖ Clear Bag- everything else. See guidelines in the laboratory.

Bloodborne Pathogen Exposure Management

See Appendix for the full policy and related documents. All documentation must be fulfilled according to LRH policy. In addition, the Program Director will be responsible for all documentation and notification of required in-house personnel, along with documentation and notification to the MLS program at FSC.

Other General Safety Guidelines for the Laboratory

- ❖ The dress code must be followed at all times, including the use of PPE while at the bench.
- ❖ Head phones are not to be used while at the bench.
- ❖ Use gloves when handling blood, biological specimens, and hazardous chemicals or reagents.
- ❖ Universal barrier precautions (personal protective equipment or PPE) are to be used when handling patients and biological specimens, including human blood and diagnostic products made from human blood.
- ❖ Biological safety cabinets will be used for blending, sonicating, and vigorous mixing.
- ❖ Work areas are to be disinfected according to laboratory procedures before and after working at the bench, and any other times as needed.
- ❖ Take precautions when handling needles. Do not bend, break, recap or remove needles from disposable syringes. All sharps must be placed in puncture resistant containers.
- ❖ Safety goggles must be worn when working with strong chemicals and when splashes are likely to occur.
- ❖ Spills must be wiped up promptly and appropriately for the type of spill. Dispose of contaminated materials according to laboratory policy.
- ❖ Avoid tasting, smelling or breathing any chemicals. Mouth pipetting is strictly prohibited.
- ❖ Manufacturer's instructions and laboratory procedures must be closely followed when operating equipment. Handle all equipment with care.
- ❖ Report any broke or frayed electrical cords, exposed wires or damaged equipment.
- ❖ Broken glassware must be discarded into the appropriate container.
- ❖ Visitors are not allowed in the laboratory.
- ❖ Any accident must be immediately reported to the instructor.

Medical Library

During your clinical experience at LRH, you are granted limited library privileges in the Medical Library. The library is located on the second floor between the B Wing and M Wing, and is open from 8:00 am to 4:30 pm Monday through Friday. During this time a librarian will be available to assist you. Please follow these guidelines when using the library:

- ❖ Books and periodicals are only available in the library for your research and review
- ❖ Use of computers is permitted, however, priority to use the computers is granted to LRMC employees first
- ❖ Noise in the library must be held to a minimal level

Evaluations

Students are evaluated by the clinical faculty during each department rotation. Evaluations encompass the knowledge, skills, and attitudes (cognitive, psychomotor, and affective domains) demonstrated by the student during the rotation and are a portion of the rotational grade. Students, in turn, are requested to evaluate the rotations, lectures, and program. Comments and constructive criticisms are vital to the welfare of the program and student cooperation in completing thought-out evaluations is solicited.

Student Exit Evaluation

Students are given the opportunity to evaluate and make constructive suggestions for each didactic course and rotation within the practicum. The survey is available online upon completion of the entire course/practicum. The information gathered by the survey will be used for program quality improvement.

Job Placement

There is no formal job placement service at Lakeland Regional Health. It is the student's responsibility to find employment following graduation. In an informal way, the hospital Talent department and the Program Director offer as much help to the student as possible. All communications sent to the Program Director concerning job opportunities are brought to the attention of the student.

Grading and Grading Scale

All students are expected to successfully complete each area (rotations and didactic lectures) with a minimum passing grade of “C” (70%) or better. Successful completion of all phases of the clinical education program is a mandatory prerequisite to graduation and certification by the school. Students’ progress through the program as indicated on the rotation schedule provided to them upon start of the program. The grading scale is as follows:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
60 - 0	F

Final grades for each course are determined by averaging all grades. Grades may come from:

1. Theory course assignments, projects and exams (administered as part of didactic coursework, at the discretion of the instructor).
2. Laboratory practical assignments, projects and exams (administered as part of didactic coursework, at the discretion of the instructor).
3. Practicum assignments and quizzes (administered throughout rotations; varies with each rotation).
4. Practicum grade:
 - a. 50%: rotation practical exams (usually administered towards the end of the rotation)
 - b. 50%: psychomotor and affective evaluation (a mid-rotation evaluation that does not count towards the student’s grade is done to help the student improve where needed; a final rotation evaluation is then done at the end of the rotation and counts toward 50% of the student’s practical grade).

Granting of the degree is not contingent upon passing an external certification or licensure exam.

Appeals

If a student feels a rule, regulation, grade, or disciplinary measure (academic or non-academic) is unfair or prejudiced, he or she may request a conference with the Program Director or with the Advisory Committee. The student will be notified in writing of the decision reached by the Program Director or the Committee. The student has the right to appeal decisions of the Program Director to the Advisory Committee and decisions of the Advisory Committee to a neutral arbitrator (the Team Leader Education Coordinator from the hospital's education department) not associated with the laboratory. Appeals must be made in writing within two working days after notice of the last action taken. Decisions of the neutral arbitrator are final.

Incidental Program Expenses

Item	Number needed	Cost per item	Total cost
Immunizations/Titers	8	Varies	Varies
Scrubs	Varies	Varies	Varies
Safety glasses	Varies	Varies	Varies
Drug Screen	One	\$30	\$30
Background Check	One	\$57	\$57
FDOH Trainee License	One	\$100	\$100
Certification Exam Fee	One	\$240	\$240
Tuition	Annual	\$38,980	\$155,920
Books	Varies	Varies	\$300-600
Lab CE	One	\$95	\$95
Liability Insurance	Annual	\$20	\$20
Clinical Laboratory Trainee License	One	\$45	\$45

(NOTE: All fees are subject to change without prior notice)

National Certification - A fee is charged by the American Society of Clinical Pathologists (ASCP) Board of Registry to be admitted to the certification examination. Other certifying bodies (AMT, AAB) will charge varying exam fees.

State Licensure - A fee is charged by the State of Florida for the clinical laboratory technologist licensure.

Room and Board - Room and board will be provided by the student. Meals may be purchased in the hospital employee cafeteria or lunches may be brought and kept in the laboratory staff lounge refrigerator.

Insurance

Students are required to provide their own medical insurance and documentation of proof of insurance must be shown to the Program Director on the first day of class. Students also purchase a liability policy for a minimal fee for liability coverage during the clinical practicum. Liability Insurance information is provided to accepted students free of charge. Lakeland Regional Health group medical insurance is NOT available to students. Each student must provide his/her own coverage and must show proof of coverage to the Program Director. Students may purchase annual health insurance from FSC for approximately \$1,600. In case a claim should arise from any laboratory incident, the student is responsible for submitting the claim to his or her insurance company and for any deductible incurred.

Essential Functions of the MLS Student

Summary:

Responsible for performing test procedures authorized by the Medical Laboratory Director, with the degree of skill commensurate with individual education, training, experience and technical abilities. Ensure that all laboratory testing is performed according to established protocols or procedures. Exercise professional judgment in evaluation and assessment of test performance, sample integrity, result accuracy and validity. Follows all safety practices and maintains ongoing competency to ensure high quality testing services.

Detailed responsibilities:

* People At The Heart Of All We Do

- ❖ Fosters an inclusive and engaged environment through teamwork and collaboration.
- ❖ Ensures patients and families have the best possible experiences across the continuum of care.
- ❖ Communicates appropriately with patients, families, team members, and our community in a manner that treasures all people as uniquely created.

* Safety And Performance Improvement

- ❖ Behaves in a mindful manner focused on self, patient, visitor, and team safety.
- ❖ Demonstrates accountability and commitment to quality work.
- ❖ Participates actively in process improvement and adoption of standard work.

* Stewardship

- ❖ Demonstrates responsible use of LRH's resources including people, finances, equipment and facilities.
- ❖ Knows and adheres to organizational and department policies and procedures.

* Standard Work Duties: Medical Technologist

- ❖ Participates in day-to-day operations in the laboratory to facilitate workflow, maximize output, and decrease turnaround times
- ❖ Follows laboratory procedures for specimen handling and processing, test analysis, reporting and maintaining records of patient results
- ❖ Utilizes job knowledge, judgment, and problem solving skills to ensure specimen quality
- ❖ Operates, troubleshoots, and takes appropriate action when needed on all test systems

- ❖ Identifies issues that may adversely affect test performance or reporting of test results and takes appropriate action including supervisory notification if indicated
- ❖ Participates in laboratory quality assurance programs including proficiency testing
- ❖ Follows established safety and biohazard procedures and standard precautions at all times. Disposes of biohazard waste following laboratory protocols (as detailed in the Laboratory Safety Manual and Chemical Hygiene Plan)
- ❖ Monitors quality control of laboratory instruments and test assays. Communicates with supervisor as needed. Responsible for routine preventive maintenance, minor repair, and troubleshooting of instruments
- ❖ Supports professional development by assisting with training and/or competency assessments for coworkers, new employees, and students.
- ❖ Ensures exceptional customer service is provided through prompt follow-up to requests for information via telephone or computer

Specifications (Physical & Mental Requirements):

Students must be able to perform the essential job-specific functions either unaided, or with the assistance of a reasonable accommodation to be determined by the organization on a case-by-case basis. If the requirement is not marked, then the standard is generally considered not applicable.

Requirement	Occasionally (1% - 33%)	Frequently (34% - 66%)	Continually (67% - 100%)	Requirement	Occasionally (1% - 33%)	Frequently (34% - 66%)	Continually (67% - 100%)
General Requirements (has the ability to...)				Required Lifting (ability to lift & lateral transfers)			
Sit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Up to 10 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stand	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11 to 24 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Walk	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	25 to 34 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Drive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35 to 50 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Bend	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	51 to 75 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climb	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	76 to 100 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kneel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Over 100 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crouch	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Twist	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pushing/Pulling (on wheels & lateral transfers)			
Maintain Balance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Up to 10 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reach	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11 to 24 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
				25 to 34 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sensory Requirements (has ability for...)				35 to 50 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Far Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	51 to 75 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Near Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	76 to 100 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color Vision	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Over 100 lbs with assistance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depth Perception	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Seeing Fine Details	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Environmental Exposure (may be exposed to...)			
Hearing Norm Speech	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Infectious Diseases	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hearing Overhead Pages	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Chemical Agents	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Dust, Mist, Fumes, Gases	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to communicate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Extremes in Temperature or Humidity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental & Emotional Requirements (ability to...)				Hazardous or Moving Equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cope with high level of stress	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Work at different levels of height	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make decisions under high pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loud Noises	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cope with anger/fear/hostility of others in a calm way	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Manage altercations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Requirements			
Concentrate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Glove use (specific to work area)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Handle a high degree of flexibility	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	PPE (Personal protective equipment specific to work area)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Handle multiple priorities in stressful situation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Respiratory Protection (specific to work area)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work without direct supervision	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vaccines/TB Screening	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Demonstrate high degree of patience	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to drive vehicle (specific to work area)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to shift work/flexible scheduling	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	May be required to work in latex environment (specific to work area)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work in confined area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Hand Manipulation (ability with...)							
Simple Grasping	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Firm Grasping	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Fine Manipulation/Keyboard/Key pad	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
To enter data into a system or equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Appendices

APPENDIX A: Special Requirements for the MLS Major

Medical Laboratory Sciences (MLS): Special Requirements for the Major

All pre-certified MLS students are required to participate in clinical laboratory experiences at off-site locations. This document outlines the steps and approval processes you must complete before you may enroll in MLS 3100 Introduction to Clinical Laboratory Sciences, the first required course at a clinical site. MLS 3100 is also the prerequisite course for all other MLS courses.

For questions regarding these requirements, contact:

Maridaliz Rodriguez Rosado, Ph.D., MLS(ASCP)

Quality Assurance Supervisor, Educator Coordinator

Lakeland Regional Health

Phone: 863.687.1100 ext. 3179

maridaliz.rodriquezrosado@mylrh.org

Personal Responsibilities: Each student is responsible for obtaining reliable transportation to the clinical laboratory sites. Students may be assigned laboratory rotations on weekends. While at a clinical site, students are expected to dress and behave in an appropriate manner, as outlined in the MLS Student Handbook. Failure to adhere to these guidelines may result in a student being unenrolled in the major.

Criminal Background Screening: Each pre-certified MLS student is required to complete a criminal background screening, including fingerprinting, prior to starting the first clinical laboratory course. Note: Any student with a prior arrest or conviction history may be denied entry into the MLS program due to our agency contract agreements. Students who apply to the MLS program with a prior criminal background check must be further screened by the Program Director and approved by the dean of the School of Arts and Sciences and the MLS Program Director prior to acceptance into the MLS pre-certification program. Failure to disclose prior criminal history on application or report any subsequent criminal arrest after enrollment at Florida Southern College to the dean of the School of Arts and Sciences and the MLS Program Director may disqualify the student from the MLS program.

Background screenings may be obtained by contacting Castle Branch

Drug Screening: Each MLS student is required to complete a ten-panel drug screen prior to starting the first clinical laboratory experience. Any student may be requested to repeat the urine drug screen as required by any clinical site or as part of a drug testing program. The cost of the background check and drug screenings is the responsibility of the student. Note: Students who have a positive drug test may be denied acceptance into the MLS program or be unenrolled from the MLS program.

Drug screenings may be obtained by contacting Castle Branch

Liability Insurance: A blanket student liability insurance policy will cover all MLS students for the time he or she is working in a clinical site as part of a supervised laboratory experience. The student will be billed the annual fee (estimate \$20).

Trainee License: Each MLS student is required to apply for and obtain a trainee license with the state prior to beginning the first clinical rotation.

Trainee licenses may be obtained by contacting Florida Department of Health

Immunizations: Each MLS student is required to provide proof of immunization prior to entering any clinical laboratory. The following are required

- a) Mantoux tuberculin test (2-step method if more than one year has passed since the last Mantoux tuberculin test)
- b) Measles/Mumps/Rubella (MMR) titers
- c) Hepatitis B titer
- d) Hepatitis C titer
- e) Varicella titer
- f) Pertussis (Tdap booster within past 10 years) vaccination record
- g) Tetanus booster every 10 years
- h) Annual flu vaccine
- i) Health statement of physical fitness from health care provider stating student may participate in clinical experience assignments

The student is responsible for all related costs for immunization. No student will be allowed to begin clinical laboratory experiences until all immunizations or proof of immunity (titers) has been submitted to the MLS director. Proof of immunizations may be obtained by contacting your Primary Doctor or FSC Medical Center

Students who have positive antibodies for Hepatitis C or HIV or other chronic infective diseases that may compromise patient safety, must be further screened and counseled. Because students will have direct contact with patients during the course of their clinical assignments in hospitals and other care settings, specific safeguards

or other restrictions to practice may be imposed on the student to protect patients and themselves. The clinical agencies will have final say whether infected students can practice or attend clinical assignments.

APPENDIX B: LRH Mandatory Education

Course	Where Found
Appropriate Waste Disposal	MediaLab
Laboratory Ergonomics	MediaLab
Regulated Medical Waste Policy Review	MediaLab
Telephone Etiquette	MediaLab
OSHA Hazard Communication and Chemical Hygiene	MediaLab
Blood Borne Pathogens: Exposure Control Plan IC.0033	Education On-Demand
Infectious Tuberculosis TB: Exposure Control Plan IC.0001	Education On-Demand
Post-Exposure Blood/Body Fluids Testing: Employees IC. 0006	Education On-Demand
LRH Student Request Packet	Orientation

APPENDIX C: Phlebotomy Clinical Experience



**MLS 3300
Phlebotomy
Florida Southern College
Spring, 2020**

PHLEBOTOMY CLINICAL EXPERIENCE

- A. This course is designated to provide students with experience and skill in collecting blood specimens suitable for clinical laboratory testing. Student learn to perform venipuncture and capillary punctures following established policies and procedures for safety and quality assurance. Experience is gained in selected ambulatory sites at Lakeland Regional Medical Center.
- B. Major Learning Outcomes:
1. The student will demonstrated knowledge of phlebotomy equipment, policies and procedures.
 2. The student will demonstrate skill in the collection of quality blood samples for clinical laboratory testing.
 3. The student will exhibit the attitudes and behaviors that are expected of a healthcare professional.
- C. Course Objectives Stated in Performance Terms:
1. The student will demonstrate knowledge of phlebotomy equipment, policies and procedures by:
 - a. Listing the equipment and supplies needed in the phlebotomy tray and explaining any special requirements associated with the use of each.
 - b. Naming the additives in each of the color-coded evacuated tubes and explaining any special requirements associated with the use of each.
 - c. Stating the correct order for filling evacuated tubes.
 - d. Describing special handling require for specific analytes.

- e. Recognizing pre-analytical factors that might adversely affect the accuracy of test results.
 - f. Listing established causes for specimen rejection.
 - g. Discussing the importance of proper patient identification and tube labeling.
2. The student will demonstrate skill in the collection of quality blood samples for clinical laboratory testing by:
 - a. Selecting the appropriate site, methods, and equipment to be used for blood collection.
 - b. Property applying a tourniquet.
 - c. Performing venipuncture using evacuated tube system, and butterflies.
 - d. Collecting capillary blood by finger stick and recognizing sources of error.
 - e. Discussing proper procedures for obtaining blood from infants by heel stick.
 - f. Explaining protocols and procedures for collecting blood cultures without contamination.
 - g. Consistently following universal precautions, infection control procedures, and all other safety regulations.
 - h. Dealing appropriately with adverse events related to phlebotomy.
 - i. Complying with all quality assurance measures related to specimen collection.
 3. The student will exhibit the attitudes and behavior that are expected of a healthcare professional by:
 - a. Appreciating the role of the phlebotomist in the delivery of quality laboratory services and patient care.
 - b. Communicating effectively with patients, supervisors, and co-workers.
 - c. Projecting a professional image in dress, grooming, language, and behavior.
 - d. Maintaining patient confidentiality.
 - e. Valuing diversity and treating all others respect.



**MLS 3300
Phlebotomy
Florida Southern College
Spring, 2020**

PHLEBOTOMY CLINICAL EXPERIENCE

Student name: _____ Ambulatory Site

Trainer: _____ Rotation dates

Instructions to Trainer: Your phlebotomy student is attending a phlebotomy theory course but has not hands-on experience. This checklist provides a recommended order of instructions. In Section I and II indicate with an O, D, or P and your initials that the student has observed, discussed, or performed each item before drawing patients.

After Section I and II have been completed, the student should draw selected patients under supervision. Students should not be expected to draw hard-to gets or babies nor should they perform hand vein punctures until they are proficient drawing from antecubital veins.

After the student has completed the required number of procedures in Section III, please assign an achievement level according to the scale provided on page 3 and initial and date. Return this form to the student who is responsible for submitting to the college instructor by the due date stated in the course syllabus.

Note: A minimum of 50 successful collection must be documented in Section III: Supervised Practice on Patients in the table below.

Section I: Orientation			
	OBSERVE/DISCUSS	INSTRUCOR	
		Initials	Date
Review safety equipment, Safety Practices			
Locate & identify equipment/supplies			
Discuss collection list & collection schedules			
Discuss confidentiality HIPAA			
Discuss patient identification, communication with patient, specimen labeling			
Discuss specimen requirements, order of draw, minimum volumes, special handling, etc.			
Discuss policies for IVs, burns, mastectomy, hard-to-gets, line draws, etc.			
Observe venipuncture with vacutainer			
Observe venipuncture with butterfly			
Observe fingerstick (if possible)			
Observe heelstick (if possible)			

SECTION II. PRACTICE ON ARTIFICIAL ARM AND/OR VOLUNTEERS		
	Perform	Instructor Initials Date
Assemble collection equipment		
Equipment selection. Palpate veins		
Practice tying on tourniquet and palpating veins on volunteers		
Practice venipuncture on artificial arm if available		
Venipuncture on volunteer-one vacutainer		
Venipuncture on volunteer-changes tubes		
Venipuncture on volunteer-butterfly		
Fingerstick on artificial arm		
Heel stick on artificial heel		

Instructions to Student: As procedures are observed or discussed, place all O for Observed and D for discussed in the Observed/Discuss column. In the Perform/Tally column, if a minimum number is required, record the number of times you perform procedure.

If a minimum number is not required, record a P for the procedures you performed. If a procedure is not available at your facility, record NA.

Return this checklist to your course instructor by the due date stated in the course syllabus.

Level of Achievement

N/A	Procedure not performed at this facility
1	DISCUSSED: Student verbalizes principle.
2	DEMONSTRATED: Student observed demonstration perform by instructor.
3	PRACTICED: Student performs procedure with coaching by instructor.
4	Maximum Supervision: Student performs procedure under direct observation. Requires coaching to handle problems.
5	Minimum Supervision: Student performs routine procedure without assistance. Recognizes and refers problems to appropriate personnel
6	Mastery: Student is competent in performing routine procedures without assistance and is capable of resolving most common problems encountered.

SECTION III: SUPERVISED PRACTICE ON PATIENTS						
	OBSERVED/DISCUSS	PERFORM/TALLY	ACHIEVEMENT LEVEL		INSTRUCTOR	
			Expected	Actual	Initials	Date
Equipment Assembly			6			
Venipuncture by vacuum tube			6			
Venipuncture by syringe (if available)			3			
Venipuncture by butterfly			6			

Fingerstick, adult (if available)			3			
Heelstick (if available)			1			
Correct order of draw vacuum tube system			6			
Correct order of draw microtube system (if available)			1			
Timed collections (if available)			1			
Specimen handling/Transport			6			

Note: A minimum of 50 successful collection must be documented in SECTION III

APPENDIX D: Lab Practicum Competency Checklist Example



Student name: _____ Microbiology Rotation Checklist

Trainer: _____ Rotation dates _____

Objectives

The laboratory instructor will assess competency based on the CLIA categories (categories used to meet competency requirements will be noted in the comments). Upon completion of this clinical rotation, the student will demonstrate understanding of the theory and demonstrate competency in each of the following skills according to the performance objectives provided. Use instructor initials to indicate level of CLIA achievement. Comment as needed.

Applicable CLIA Competency Assessment Procedures

1. Direct observation of routine patient test performance
2. Monitoring the recording and reporting of test results
3. Review of intermediate test results, QC records, proficiency testing results, and preventive maintenance records
4. Direct observation of performance of instrument maintenance and function checks
5. Assessment of test performance through testing previously analyzed specimens, internal blind testing samples, or external proficiency testing samples
6. Assessment of problem-solving skills

Quality Control and Maintenance	Expected Level	Score	Date	Comments
Performs QC on routinely used microbiology reagents, media, and applicable instrumentation	5			
Observes or performs preventative maintenance on microbe	5			

identification and blood culture instruments				
Troubleshoots unacceptable QC within the protocols of the lab policies	5			
Determines corrective action with documentation during cumulative QC review	5			
Instrumentation				
Performs daily instrument start up and maintenance with correct documentation	5			
Performs weekly maintenance with correct documentation	5			
Performs monthly maintenance with correct documentation	4			
Accurately documents any instrumentation errors indicating appropriate corrective action (<i>provide documentation of troubleshooting incidents</i>)	5			
Specimen Processing				
State the sample types that are acceptable/rejection criteria for each type of culture or rapid test.	5			
Correctly identifies source identification and proper labeling	5			
Appropriately streaks, inoculates, incubates, and/or packages the specimens according to procedure	5			
Blood Cultures				
Read/discuss principle of the instrument operation or test procedure reaction.	4			
Load and unload blood culture bottles	4			
Discuss and/or perform the procedure for processing and “calling” positive blood cultures	5			
Microbial ID and Sensitivity				

Discuss the methodology of the microbial identification and sensitivity system.	5			
Successfully inoculate and read ID and sensitivity panels.	5			
Recognize and troubleshoot results that are unexpected or unacceptable.	5			
Gram Stains				
Successfully completes a minimum of 5 respiratory, 5 blood culture, 5 urines, 5 yeast, and 5 wound/misc gram stains)	5			
Plate Reading				
Discuss, observe, and participate in identifying pathogenic organisms in the following types of cultures: blood cultures, respiratory, gastrointestinal, urogenital, and miscellaneous sites such as wounds, CSF and other body fluids.)	5			
Identify normal flora and differentiate normal flora from pathogens in each of culture types listed above.	5			
Theory				
Discuss the clinical significance of abnormal results obtained, correlating patient results as to possible disease and/or therapy states.	5			
Special Procedures				
Catalase, Coagulase, Staph or Strep Typing	5			
Oxidase, Indole, PYR	5			
Microdase, Cefinase disks, etc.	5			
Wet mounts	5			
MRSA screens	5			
Kirby Bauer, Etest, etc.	5			
Molecular Diagnostics (Cepheid, OptiGene, etc.)	5			

Serology tests (Flu, Strep, RSV, etc.)	5			
Patient Results				
Correctly verified patient ID and specimen type including correct tubes, collection, special handling and/or priority and resolves any issue prior to testing	5			
Test performance with efficient and accurate skill on all major chemistry analyzers (GenXpert, Biofire, Panther, Anaerobic Chamber, VersaTrek, Anoxomax, Previ Stain, BacT/Alert Virtuo, Vitek, MS MalDI-Tof). <i>Please attach list of testing completed.</i>	5			
Identifies critical values and takes appropriate action per lab policy	5			
Documents notification of critical values per lab protocol	5			
Correctly enters patient results into LIS	5			
Can correlate results with disease diagnosis/prognosis	4			
Demonstrates superior multi-tasking within the microbiology department	4			
Affective Skills				
Maintains strict patient confidentiality: HIPAA	5			
Adheres to SOPs and refers to them appropriately	5			
Relates to co-workers in a positive manner	4			

Uses all PPE and safety devices correctly and consistently	5			
Leaves work area clean, stocked and organized for the following shift	4			
Maintains a satisfactory attendance; appropriately communicates tardiness, early departures and absences	4			
Performs work willingly and independently; uses time constructively, Accepts criticism and guidance openly	5			

Based on the performance, would you consider this student rotation completed?

Yes No

Student: _____

Date: _____

Instructor: _____ Date: _____

Additional Comments:

APPENDIX E: Accreditation Approval Status

The FSC LRH MLS program is seeking accreditation from the National Accrediting Agency for Clinical Laboratory Science (NAACLS: <https://naaccls.org/Home.aspx>).

- As of August, 2020, the program is welcoming the first class of MLS majors to their fourth and final year of the program.
- As required by NAACLS, the program has submitted a preliminary report which was approved in October, 2018. The review of the Report for the MLS program indicates that the program has potential for compliance with NAACLS Standards.
- The next step in our accreditation process is the submission of a Self-Study Report to NAACLS in February of 2021. This Report is a thorough review of all aspects of the program and their alignment with NAACLS Standards.
- After the receipt of the Self-Study Report, NAACLS will arrange for a site visit in the fall of 2021. This will be the last step in receiving full accreditation for the program.

APPENDIX F: List of Clinical Facilities

Lakeland Regional Health Clinical Facilities

Phlebotomy Clinical Practice Center
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Lakeland Regional Health Lake Miriam Urgent Care

4710 Florida Ave S, Lakeland FL, 33813

863-284-5000

Lakeland Regional Health Gateway Walk-In-Care

2815 Lakeland Hills Blvd, Lakeland FL, 33805

863-284-5000

Lakeland Regional Health Pablo Campus

130 Pablo St, Lakeland FL, 33803

863-284-5000

Lakeland Regional Health Hollis Cancer Center

3525 Lakeland Hills Blvd, Lakeland FL, 33805

863-603-6565

Clinical Affiliate System

OneBlood Services

1324 Lakeland Hills Blvd, Lakeland FL, 33805

863-687-1227

APPENDIX G: Program Faculty

Names and Academic Rank or Title of the Program Director and Faculty in the Medical Laboratory Sciences Major at Florida Southern College

Program Director:

Maridaliz Rodriguez Rosado, Ph.D, MLS(ASCP)cm
QA Supervisor/Educator Coordinator
Clinical Laboratory
Lakeland Regional Medical Center

Although rotation of faculty may occur within the courses, current faculty available to teach the courses in the MLS major are listed below:

Course number	Course Title	Faculty
BIO 1500	Biology I: Biological Essentials	S. Banks, Ph.D.; C. Brandon, Ph.D.; N. Morvillo, Ph.D.
BIO 1501	Current Perspectives in Biology	S. Banks, Ph.D.; C. Brandon, Ph.D.; N. Morvillo, Ph.D.
BIO 2215	Human Anatomy and Physiology I	G.S. Jenkins, Ph.D.; A. Bowers-Macrandner, M.S.; J. Lynch, M.D.; T. Moore, M.S.
BIO 2216	Human Anatomy and Physiology II	G.S. Jenkins, Ph.D.; A. Bowers-Macrandner, M.S.; J. Lynch, M.D.; T. Moore, M.S.
BIO 3362	Biochemistry: Molecular Biology	N. Morvillo, Ph.D.
BIO 3710	Microbiology	B. Gaper-Warrick, Ph.D.
BIO 3850	Parasitology	G. Langford, Ph.D.
BIO 4300	Immunology	B. Gaper-Warrick, Ph.D.
CHE 1111	Principles of Chemistry I	C. Gauthier, Ph.D.; A. Le, Ph.D.
CHE 1112	Principles of Chemistry II	C. Gauthier, Ph.D.; A. Le, Ph.D.
CHE 2231	Organic Chemistry I	D. Bromfield Lee, Ph.D.; S. Shelby, Ph.D.
CHE 2251	Organic Chemistry I Lab	D. Bromfield Lee, Ph.D.; S. Shelby, Ph.D.
CHE 2232	Organic Chemistry II	D. Bromfield Lee, Ph.D.; S. Shelby, Ph.D.
CHE 2252	Organic Chemistry II Lab	D. Bromfield Lee, Ph.D.; S. Shelby, Ph.D.
MAT 2032	Biostatistics	D. Jelsovsky, Ph.D.; S. Serrano, Ph.D.
MLS 3100	Introduction to Clinical Laboratory Sciences	M. Rodriguez-Rosado, Ph.D.; MT (ASCP)
MLS 3200	Clinical Chemistry and Immunology	D. Smith, MSM, MT (AMT)
MLS 3300	Phlebotomy	M. Rodriguez-Rosado, Ph.D.; MT (ASCP)

MLS 4100	Clinical Hematology	C. Hammett, SU (ASCP)
MLS 4200	Clinical Immunohematology	D. Smith, MSM, MT (AMT)
MLS 4300	Clinical Hemostasis, Urinalysis and Body Fluids	M. Rodriguez-Rosado, Ph.D.; MT (ASCP)
MLS 4400	Clinical Microbiology	M. Rodriguez-Rosado, Ph.D.; MT (ASCP)
MLS 4500	Molecular Pathology Methods	M. Rodriguez-Rosado, Ph.D.; MT (ASCP)
MLS 4800	Medical Laboratory Science Practicum	M. Rodriguez-Rosado, Ph.D.; MT (ASCP); T. Ohrmund MBA, MT (ASCP), CLS, CIC
MLS 4900	Medical Laboratory Science Capstone	T. Ohrmund MBA, MT (ASCP), CLS, CIC