

Part I: Introduction

A. Welcome!

Welcome to the Clinical Laboratory Science Programs! You're beginning an interesting and exciting career. More than 70% of the decisions made by doctors are based on the results of laboratory testing. You'll be doing important work, whether you are employed by a hospital laboratory, a blood donor center, a research laboratory, or in industry.

In the Phlebotomy certificate program, you'll learn how to collect, transport, and process the blood specimens and other samples that are needed to perform laboratory tests. In as little as one semester plus four weeks, you can be eligible for employment and national certification as a phlebotomy technician.

In the Medical Laboratory Technician and Medical Technology programs, you'll learn how to identify which bacteria are causing infection, how to provide blood products for patients needing transfusion, how to identify the blood cells that cause leukemia, and how to detect and measure chemicals in the blood such as cholesterol, drugs, and hormones. Then you'll be assigned to a clinical affiliate for more practice in an actual clinical laboratory.

These are not an easy programs – you'll spend long hours in classes and labs. But you'll be joining some of the best and nicest students in the university. You'll make friends among both students and faculty. We all work together to help you succeed.

Although you'll be assigned to one academic advisor when you enter the program, please feel free to ask any of the program faculty for help or information. We all want you to learn, prosper, and thrive in the clinical laboratory. This handbook provides some of the information you need. Keep it handy. You'll get a new copy every year until you finish the program.

B. Purpose of This Handbook

The CLS Student Handbook provides you with information about the policies of the Clinical Laboratory Science programs. The target audience is current and prospective students in Clinical Laboratory Sciences and Ferris State University.

This handbook does not replace the Ferris Student Handbook. This book serves as an extra source of information specific to the CLS programs. We recommend that you refer to the Ferris State University web site for the most current information throughout your course of study at Ferris State University. You can find the online version of the University's student handbook at

<http://www.ferris.edu/htmls/administration/StudentAffairs/Studenthandbook/>

C. Organization

1. College of Allied Health Sciences

The CLS programs are in the College of Allied Health Sciences. Figure 1 shows the organization of the College of Allied Health Sciences, so you can better understand the structure and programming of the College of which your chosen program is a part.

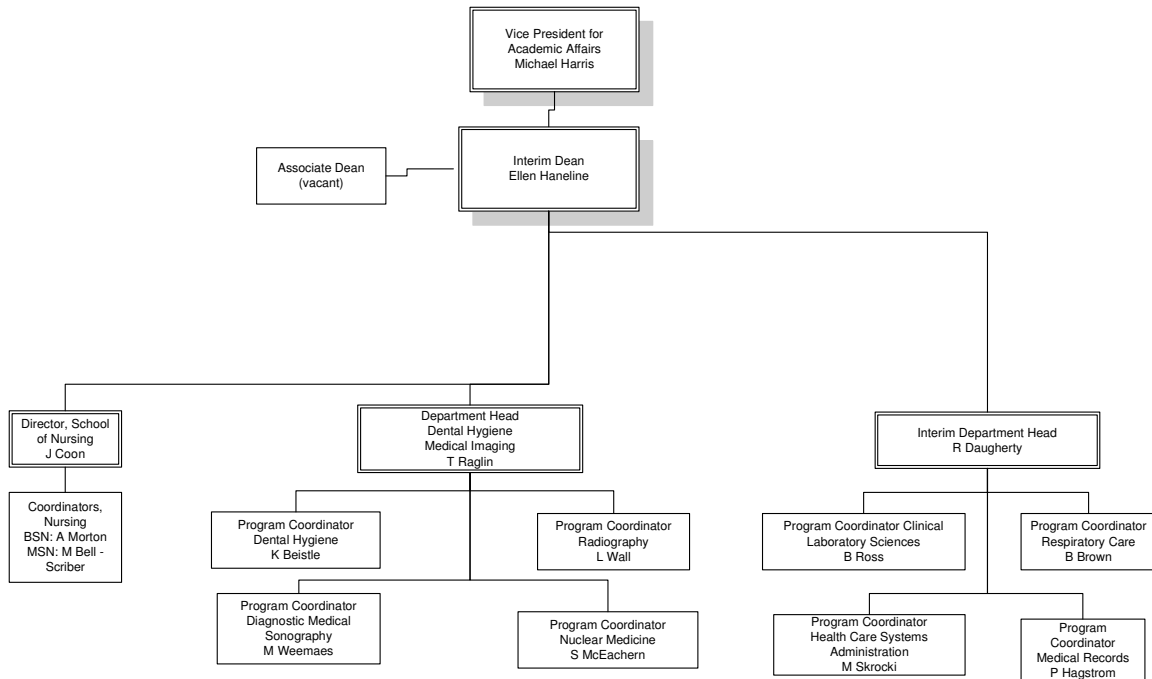


Figure 1.

2. Department of Clinical Laboratory, Respiratory Care, and Health Administration Programs

The Interim Department Head is Mr. Roger Daugherty. Mr. Daugherty is responsible for overall administration of the CLS programs. His office is in VFS 402, telephone 231.591.2277. His e-mail address is daugherr@ferris.edu. The Department Secretary is Ms. Nancy Alles. Her office is VFS 403, telephone 231.591.2266. Her e-mail address is allesn@ferris.edu.

3. Clinical Laboratory Science Programs

Ms. Barbara Ross is the CLS Program Coordinator. Ms. Ross is responsible for many program activities including accreditation, and recruiting and retention of students. Mr. Daniel P deRegnier is the Clinical Coordinator. Students should consult with him regarding their clinical experience (internship).

There are three full time faculty, occasional part – time faculty, and one laboratory manager employed in the Clinical Laboratory Science Programs. Here is a summary of each full – time person’s responsibilities:

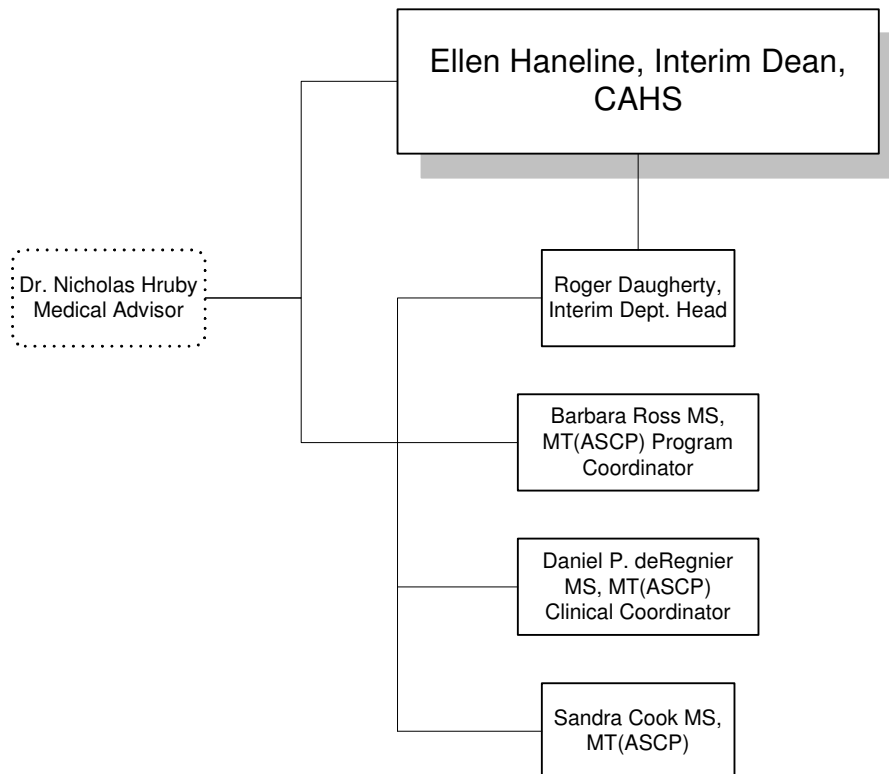
Sandra Cook MS, MT(ASCP)
Office: VFS 427
Telephone: 231.591.2314
E-mail: COOKS@FERRIS.EDU
Instruction in: Hematology, Body Fluid Analysis, Hemostasis

Daniel P. deRegnier MS, MT(ASCP)
Office: VFS 418
Telephone: 231.591.2327
E-mail: DEREGNID@FERRIS.EDU
Instruction in: Clinical Microbiology, Basic and Clinical Immunology, Medical Virology, Parasitology, Mycology

Barbara Ross MS, MT(ASCP)
Office: VFS 303
Telephone: 231.591.2317
E-mail: ROSSB@FERRIS.EDU
Instruction in: Clinical Chemistry, Immunohematology, Laboratory Management

Clinical Laboratory Sciences

September 1, 2006



4. Program Accreditation Information

The CLS programs at Ferris State University are fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). NAACLS can be contacted as follows:

NAACLS
8410 W. Bryn Mawr Ave.
Suite 670
Chicago, IL 60631
888-714-4278
<http://www.naacls.org>

As a graduate of a nationally certified program in Medical Technology or Medical Laboratory Technology, you will be eligible to take national certification examinations. The Certificate in Phlebotomy Program is seeking national approval.

D. Overview of the Programs

The Clinical Laboratory Sciences Programs at Ferris State University include a certificate, an associate degree and a baccalaureate degree program. The certificate in phlebotomy can be completed in one semester plus a four – week internship. It includes a total of 12 credits. The course work includes Orientation to Health Care, Safety Issues in Health Care, Orientation to Medical Vocabulary, Introduction to Specimen Collection, Specimen Collection Laboratory and internship at one of several affiliate laboratories.

The Medical Laboratory Technician Program is five semesters in length and leads to an Associate in Applied Science degree. The curriculum includes general education courses, College of Allied Health Sciences core courses, and courses in the various laboratory disciplines. The program includes a 14-week clinical experience (internship) at one of several clinical affiliates in Michigan.

The Medical Technology Program combines specified courses in biology, chemistry, mathematics, management, statistics, CAHS core courses, and the general education courses required for the Bachelor of Science degree. These courses may be completed by Medical Technology students within the College of Allied Health Sciences, by students in another program or College at Ferris, or at any other college or university. The professional phase of the Medical Technology Program includes advanced courses in natural sciences and basic and advanced courses in clinical laboratory disciplines. Students can complete this program via two routes. Most students complete all required courses on campus and then finish the program with clinical experience (internship). Other students complete an associate degree MLT program and then enter the MT program to gain the advanced knowledge and skills for the baccalaureate degree.

E. Program Check Sheets and Comparison Chart

The next pages include program check sheets for the Phlebotomy, MLT and MT programs and a comparison of the two programs.

**FERRIS STATE UNIVERSITY
PHLEBOTOMY CERTIFICATE PROGRAM**

Name _____ Student Number _____

	Required	Course Title – Pre/Co requisites in ()	Credits	Grade	Req. Met
		CAHS Core Curriculum Requirements – 5 credits			
CCHS	101	Orientation to Health Care (none)	3		
CCHS	102	Safety Issues in Health Care (none)	1		
MRIS	102	Orientation to Medical Vocabulary (none)	1		
		Clinical Laboratory Sciences Courses – 7 credits			
CLLS	122	Introduction to Specimen Collection (concurrent enrollment in CLLS 123)	2		
CLLS	123	Specimen Collection Laboratory (concurrent enrollment in CLLS 122)	1		
CLLS	191	Clinical Experience in Phlebotomy (CCHS 101, 102; CLLS 122, 123; MRIS 102 with grade of C or better) (160 clock hours)	4		
		Total Program Credits: 12			
		Progression: Students must complete all other courses with a grade of C or better before enrolling in CLLS 191			
		Students who return to the University after an interrupted enrollment (not including summer semester) must meet the requirements of the curriculum which are in effect at the time of their return, not the requirements which were in effect when they were originally admitted.			

Graduation Clearance Form Complete: _____ (date)

Advisor Signature _____ (date) _____

Student Signature _____ (date) _____

**FERRIS STATE UNIVERSITY
MEDICAL LABORATORY TECHNOLOGY PROGRAM**

Name _____ Student Number _____

	Required	Course Title – Pre/Co requisites in ()	Credits	Grade	Req. Met
		CAHS Core Curriculum Requirements: 6 - 7 credits Required			
CCHS	101	Orientation to Health Care (none)	3		
CCHS	102	Safety Issues in Health Care (none)	1		
CCHS	103	Clinical Skills for Health Care Providers (CAHS enrollment)	1		
MRIS	102	Orientation to Medical Vocabulary (none)	1		
FSUS	100	Ferris State University Seminar (none) – FTIAC only	1		
		Computer Competency			
		Clinical Laboratory Sciences Courses: 40 Credits Required			
CLLS	101	Clinical Laboratory Science Orientation (none)	1		
CLLS	122	Introduction to Specimen Collection (concurrent enrollment in CLLS 123)	2		
CLLS	123	Specimen Collection Laboratory (concurrent enrollment in CLLS 122)	1		
CLLS	216	Clinical Chemistry (BIOL 205, CHEM 214; concurrent enrollment in CLLS 217)	3		
CLLS	217	Clinical Chemistry Laboratory (concurrent enrollment in CLLS 216)	1		
CLLS	218	Body Fluid Analysis (BIOL 205)	1		
CLLS	219	Hemostasis (BIOL 205)	1		
CLLS	220	Body Fluid and Hemostasis Laboratory (concurrent enrollment in CLLS 218 and 219)	1		
CLLS	231	Hematology (BIOL 205, CHEM 214, concurrent enrollment in CLLS 232)	2		
CLLS	232	Hematology Laboratory (concurrent enrollment in CLLS 231)	1		
CLLS	236	Diagnostic Microbiology (BIOL 108 or 286; BIOL 205, CHEM 214, concurrent enrollment in CLLS 237)	2		
CLLS	237	Diagnostic Microbiology Laboratory (concurrent enrollment in CLLS 236)	2		
CLLS	241	Medical Virology/Mycology/Parasitology (BIOL 108 or 286, concurrent enrollment in CLLS 242)	2		
CLLS	242	Medical Virology/Mycology/Parasitology Laboratory (concurrent enrollment in CLLS 241)	1		
CLLS	252	Introduction to Clinical Immunology (BIOL 205, concurrent enrollment in CLLS 253)	2		
CLLS	253	Introduction to Clinical Immunology Laboratory (concurrent enrollment in CLLS 252)	1		
CLLS	256	Simulated Clinical Laboratory (CLLS 217, 220, 232, 237, 253, 259)	3		
CLLS	258	Immunohematology (BIOL 205, CLLS 251 and 252, concurrent enrollment in CLLS 259)	2		
CLLS	259	Immunohematology Laboratory (concurrent enrollment in CLLS 258)	1		
CLLS	281	Application of Clinical Laboratory Science (CLLS 256)	1		
CLLS	292	Applied Clinical Practicum 1 (CLLS 256)	6		
CLLS	293	Applied Clinical Practicum 2 (CLLS 292)	5		
		Communication Competence: 9 Credits Required			
COMM	221	Small Group Decision Making (none)	3		
ENGL	150	English 1 (ENGL 074 or ACT 14)	3		
ENGL	250	English 2 (ENGL 150)	3		
		Scientific Understanding: 16 Credits Required			
BIOL	108	Medical Microbiology (none)	3		
BIOL	205	Human Anatomy and Physiology (CHEM 114)	5		
CHEM	114	Introduction to General Chemistry (CHEM 103 or HS Chem and Math 110 or ACT 19)	4		
CHEM	214	Fundamentals of Organic Chemistry (CHEM 114 or 121)	4		
		Quantitative Skills: Proficiency or Course Required			
MATH	117	Contemporary Mathematics (MATH 110 or ACT 19) 130	4		
		Cultural Enrichment: 3 Credits Required			
		Cultural Enrichment Elective	3		
		Social Foundations: 3 Credits Required			
		Social Foundations Elective	3		
		Total Credits Required	81 – 82		

		Progression: Students must complete BIOL 205, CHEM 214, all CLLS courses and CAHS core courses with a grade of C or better			
		Students who return to the University after an interrupted enrollment (not including summer semester) must meet the requirements of the curriculum which are in effect at the time of their return, not the requirements which were in effect when they were originally admitted.			

Graduation Clearance Form Complete: _____ (date)

Advisor Signature _____ (date) _____

Student Signature _____ (date) _____

**FERRIS STATE UNIVERSITY
MEDICAL TECHNOLOGY PROGRAM**

Name _____ Student Number _____

	Required	Course Title – Pre/Co requisites in ()	Credits	Grade	Req. Met
		CAHS Core Curriculum Requirements: 6 - 7 credits Required			
CCHS	101	Orientation to Health Care (none)	3		
CCHS	102	Safety Issues in Health Care (none)	1		
CCHS	103	Clinical Skills for Health Care Providers (CAHS enrollment)	1		
MRIS	102	Orientation to Medical Vocabulary (none)	1		
FSUS	100	Ferris State University Seminar (none) – FTIAC only	1		
		Computer Competency			
		Clinical Laboratory Sciences Courses: 62 Credits Required			
CLLS	101	Clinical Laboratory Science Orientation (none)	1		
CLLS	122	Introduction to Specimen Collection (none)	2		
CLLS	123	Specimen Collection Laboratory (concurrent enrollment in CLLS 122)	1		
CLLS	216	Clinical Chemistry (BIOL 205, CHEM 214, concurrent enrollment in CLLS 217)	3		
CLLS	217	Clinical Chemistry Laboratory (concurrent enrollment in CLLS 215)	1		
CLLS	218	Body Fluid Analysis (BIOL 205, concurrent enrollment in CLLS 219 and 220)	1		
CLLS	219	Hemostasis (BIOL 205, concurrent enrollment in CLLS 218 and 220)	1		
CLLS	220	Body Fluid Analysis and Hemostasis Laboratory (concurrent enrollment in CLLS 218 and 219)	1		
CLLS	231	Hematology (BIOL 205, CHEM 214, concurrent enrollment in CLLS 232)	2		
CLLS	232	Hematology Laboratory (concurrent enrollment in CLLS 231)	1		
CLLS	236	Diagnostic Microbiology (BIOL 108 or 286, BIOL 205, CHEM 214, concurrent enrollment in CLLS 237)	2		
CLLS	237	Diagnostic Microbiology Laboratory (concurrent enrollment in CLLS 236)	2		
CLLS	241	Medical Virology/Mycology/Parasitology (BIOL 108 or 286, concurrent enrollment in CLLS 242)	2		
CLLS	242	Medical Virology/Mycology/Parasitology Laboratory (concurrent enrollment in CLLS 241)	1		
CLLS	252	Introduction to Clinical Immunology (BIOL 205, concurrent enrollment in CLLS 253)	2		
CLLS	253	Introduction to Clinical Immunology Laboratory (concurrent enrollment in CLLS 252)	1		
CLLS	258	Immunoematology (BIOL 205; CLLS 251, 252, concurrent enrollment in CLLS 259)	2		
CLLS	259	Immunoematology Laboratory (concurrent enrollment in CLLS 258)	1		
CLLS	356	Advanced Clinical Chemistry (CLLS 216, EHSM 315, concurrent enrollment in CLLS 357)	2		
CLLS	357	Advanced Clinical Chemistry Laboratory (concurrent enrollment in CLLS 356)	1		
CLLS	431	Advanced Hematology (CLLS 218, 219, 220, 231, 232, concurrent enrollment in CLLS 432)	2		
CLLS	432	Advanced Hematology Laboratory (concurrent enrollment in CLLS 431)	1		
CLLS	436	Advanced Diagnostic Microbiology (CLLS 236, concurrent enrollment in CLLS 437)	2		
CLLS	437	Advanced Diagnostic Microbiology Laboratory (concurrent enrollment in CLLS 436)	2		
CLLS	456	Clinical Laboratory Practicum (CLLS 356, 431, 437, 459)	3		
CLLS	458	Advanced Immunoematology (CLLS 252, 258, concurrent enrollment in CLLS 459)	1		
CLLS	459	Advanced Immunoematology Laboratory (concurrent enrollment in CLLS 458)	1		
CLLS	465	Management of the Clinical Laboratory (CLLS 356, 431, 436, 458)	3		
		Clinical Laboratory Sciences Courses: 62 Credits Required,			

		continued			
CLLS	481	Clinical Laboratory Science Applications (concurrent enrollment in CLLS 491)	1		
CLLS	491	Clinical Laboratory Practice (CLLS 456, concurrent enrollment in CLLS 481)	14		
CLLS	494	Management Practice in Clinical Laboratory Science (CLLS 465)	1		
CLLS	499	Clinical Laboratory Science Seminar (last semester on campus)	1		
Communication Competence: 12 Credits Required					
COMM	221	Small Group Decision Making (none)	3		
ENGL	150	English 1 (ENGL 074 or ACT 14)	3		
ENGL	250	English 2 (ENGL 150)	3		
ENGL	321	Advanced Composition (ENGL 250)	3		
Scientific Understanding: 26 Credits Required					
BIOL	103	Biological Concepts (none)	4		
BIOL	108 or 286	Medical Microbiology (none) OR General Microbiology (CHEM 122)	3		
BIOL	205	Human Anatomy and Physiology (CHEM 114)	5		
BIOL	300	Pathophysiology (BIOL 205 and CHEM 214)	3		
CHEM	114	Introduction to General Chemistry (CHEM 103 or HS Chem and Math 110 or ACT 19)	4		
CHEM	214	Fundamentals of Organic Chemistry (CHEM 114 or 121)	4		
CHEM	324	Fundamentals of Biochemistry (CHEM 214)	3		
Quantitative Skills: Proficiency or 4 Credits Required					
MATH	117	Contemporary Mathematics (MATH 110 or ACT 19)	4		
Cultural Enrichment: 9 Credits Required					
		Cultural Enrichment Elective	3		
		Cultural Enrichment Elective	3		
		Cultural Enrichment Elective (200 level or above)	3		
Social Foundations: 9 Credits Required					
		Social Foundations Elective	3		
		Social Awareness Elective	3		
		Social Awareness Elective (200 level or above)	3		
Other Requirements (7 Credits Required)					
EHSM	315	Epidemiology and Statistics (none)	3		
HCSA	335	Supervisory Practices for Health Care Workers (none)	4		
		Total Credits Required	136 – 137		
		Progression: Students must complete BIOL 205, CHEM 214, all CLLS courses and CAHS courses with a grade of C or better			
		Students who return to the University after an interrupted enrollment (not including summer semester) must meet the requirements of the curriculum which are in effect at the time of their return, not the requirements which were in effect when they were originally admitted.			

Graduation Clearance Form Complete: _____ (date)

Advisor Signature _____ (date) _____

Student Signature _____ (date) _____

Clinical Laboratory Science Programs Comparison Chart

Arts and Sciences Courses		Phlebotomy Certificate	AAS in MLT	BS in MT
BIOL 103	Biological Concepts	No	No	Yes
BIOL 108 or 286	Medical Microbiology or General Microbiology	No	Yes	Yes
BIOL 205	Human Anatomy and Physiology	No	Yes	Yes
BIOL 300	Pathophysiology	No	No	Yes
CHEM 114	Introduction to General Chemistry	No	Yes	Yes
CHEM 214	Fundamentals of Organic Chemistry	No	Yes	Yes
CHEM 324	Fundamentals of Biochemistry	No	No	Yes
MATH 117	Contemporary Mathematics	No	Yes	Yes
ENGL 150	English 1	No	Yes	Yes
ENGL 250	English 2	No	Yes	Yes
ENGL 321	Advanced Composition	No	No	Yes
COMM 221	Small Group Decision Making	No	Yes	Yes
Cultural Enrichment Elective		No	Yes	Yes
Cultural Enrichment Elective		No	No	Yes
Cultural Enrichment Elective	(200 level or above)	No	No	Yes
Social Foundations Elective		No	Yes	Yes
Social Foundations Elective		No	No	Yes
Social Foundations Elective	(200 level or above)	No	No	Yes
CAHS Courses				
CCHS 101	Introduction to Health Care	Yes	Yes	Yes
CCHS 102	Safety in Health Care	Yes	Yes	Yes
CCHS 103	Clinical Skills for Health Care Providers	No	Yes	Yes
MRIS 102	Orientation to Medical Vocabulary	Yes	Yes	Yes
EHSM 315	Epidemiology and Statistics	No	No	Yes
HCSA 335	Supervisory Practices for Health Care Workers	No	No	Yes
CLS Courses				
CLLS 101	Clinical Laboratory Science Orientation	No	Yes	Yes
CLLS 122	Introduction to Specimen Collection	Yes	Yes	Yes
CLLS 123	Specimen Collection Laboratory	Yes	Yes	Yes
CLLS 191	Clinical Experience in Phlebotomy	Yes	No	No
CLLS 216	Clinical Chemistry	No	Yes	Yes
CLLS 217	Clinical Chemistry Laboratory	No	Yes	Yes
CLLS 218	Body Fluid Analysis	No	Yes	Yes
CLLS 219	Hemostasis	No	Yes	Yes
CLLS 220	Body Fluid/Hemostasis Laboratory	No	Yes	Yes
CLS Courses, Continued:				

CLLS 231	Hematology	No	Yes	Yes
CLLS 232	Hematology Laboratory	No	Yes	Yes
CLLS 236	Diagnostic Microbiology	No	Yes	Yes
CLLS 237	Diagnostic Microbiology Laboratory	No	Yes	Yes
CLLS 241	Medical Virology/Mycology/Parasitology	No	Yes	Yes
CLLS 242	Med. Virology/Mycology/Parasitology Lab	No	Yes	Yes
CLLS 252	Introduction to Clinical Immunology	No	Yes	Yes
CLLS 253	Intro to Clinical Immunology Laboratory	No	Yes	Yes
CLLS 256	Simulated Clinical Laboratory	No	Yes	No
CLLS 258	Immunoematology	No	Yes	Yes
CLLS 259	Immunoematology Laboratory	No	Yes	Yes
CLLS 281	Applications of CLS	No	Yes	No
CLLS 292	Applied Clinical Practicum 1	No	Yes	No
CLLS 293	Applied Clinical Practicum 2	No	Yes	No
CLLS 356	Advanced Clinical Chemistry	No	No	Yes
CLLS 357	Advanced Clinical Chemistry Laboratory	No	No	Yes
CLLS 431	Advanced Hematology	No	No	Yes
CLLS 432	Advanced Hematology Laboratory	No	No	Yes
CLLS 436	Advanced Diagnostic Microbiology	No	No	Yes
CLLS 437	Adv. Diag. Microbiology Laboratory	No	No	Yes
CLLS 456	Clinical Laboratory Practicum	No	No	Yes
CLLS 458	Advanced Immunoematology	No	No	Yes
CLLS 459	Advanced Immunoematology Lab	No	No	Yes
CLLS 465	Management of the Clinical Laboratory	No	No	Yes
CLLS 481	CLS Applications	No	No	Yes
CLLS 491	CLS Laboratory Practice	No	No	Yes
CLLS 494	Management Practice in CLS	No	No	Yes
CLLS 499	CLS Seminar	No	No	Yes

F. Phlebotomy Certificate Program Goals

The goals of the Phlebotomy Certificate Program at Ferris State University are:

1. To define clearly what is expected of students in the program, to make these expectations clear to all students, and to help students fulfill these expectations.
2. To incorporate appropriate courses into the curriculum, and to educate professionals aware of the needs and values of a changing world.
3. To provide evaluation mechanisms which recognize individual competencies and allow for advanced placement where appropriate.
4. To provide the opportunity for worthwhile clinical experiences for all qualified students.
5. To provide a mechanism that coordinates classroom and laboratory preparation with clinical experience.
6. To provide the opportunity for students who complete the phlebotomy program to apply their courses to further their education and earn a degree from Ferris State University in either Medical Laboratory Technology or Medical Technology.

G. Medical Laboratory Technician Program Goals and Competencies

The goals of the Medical Laboratory Technician Program at Ferris State University are:

1. To prepare graduates for employment in a variety of settings at career entry level.
2. To define clearly what is expected of students at all levels of the program, to make these expectations clear to all students, and to help students fulfill those expectations.
3. To incorporate appropriate liberal arts, science, and Allied Health core courses into the curriculum and to educate professionals aware of the needs and values of a changing world.
4. To provide evaluation mechanisms which recognize individual competencies and allow for advanced placement where appropriate.
5. To provide the opportunity for worthwhile clinical experiences for all qualified students.
6. To offer appropriate continuing education opportunities to medical laboratory professionals.

An additional program goal is to prepare graduates for employment in a variety of clinical laboratory settings at career entry level, with the following general entry level competencies:

- To follow all safety policies of the laboratory, and to recognize and correct unsafe conditions.
- To be able to work as members of the health care team.
- To be capable of professional advancement.
- To be able to maintain their technical competence under the normally stressful conditions of a clinical laboratory.
- To be able to integrate theory and practice effectively in classrooms and laboratories as well as at clinical affiliates.

- To be able to generate data to be used in patient care, evaluate the validity of those data and assure reliability before reporting test results.
- To recognize the importance of quality control and quality assurance programs in the production of laboratory results.
- To collect and process samples of blood and other body fluids, and evaluate the suitability of those samples for analysis.
- To perform routine tests and suggest appropriate additional follow-up or problem solving tests where needed.
- To maintain instruments and identify malfunctioning systems.
- To communicate effectively with other members of the health care team and with patients and their families.
- To correlate results from all areas of the laboratory and relate these results to the clinical condition of the patient.
- to perform as laboratory professionals by respecting the confidentiality of patient data; maintaining neatness in personal habits, work areas, and laboratory reports; performing to the best of their abilities; following established employment policies; and assuming responsibility of their conduct as well as their work.
- To recognize the need for lifelong learning, within the field of laboratory practice and in life.

H. Medical Technology Program Goals and Competencies

The goals of the Medical Technology Program at Ferris State University are:

1. To define clearly what is expected of students in the program, to make these expectations clear to all students, and to help students fulfill those expectations.
2. To incorporate appropriate liberal arts, management, and communications courses into the curriculum and to educate professionals aware of the needs and values of a changing world.
3. To provide evaluation mechanisms which recognize individual competencies and allow for advanced placement where appropriate.
4. To provide the opportunity for worthwhile clinical experiences for all qualified students.
5. To provide a mechanism that coordinates on campus preparation with the clinical experience.
6. To provide the opportunity for certified Medical Laboratory Technicians to obtain a baccalaureate degree that builds on their associate degree, and earn national certification.
7. To offer appropriate continuing education opportunities to medical laboratory professionals.

An additional program goal is to prepare graduates for employment in a variety of clinical laboratory settings at career entry level, with the following general entry level competencies:

- To follow all safety policies of the laboratory, and to recognize and correct unsafe conditions.
- To be able to work as members of the health care team.
- To be capable of professional advancement, whether in technical, industrial, management, or educational positions.

- To be able to maintain their technical competence under the normally stressful conditions of a clinical laboratory.
- To be able to integrate theory and practice effectively in campus laboratories, as well as at clinical affiliates.
- To be able to generate data to be used in patient care, evaluate the validity of those data and assure reliability before reporting test results.
- To recognize the importance of quality control and quality assurance programs in the production of laboratory results, and to be familiar with, and able to participate in, Total Quality Management and Continuous Quality Improvement programs.
- To collect and process samples of blood and other body fluids, and evaluate the suitability of those samples for analysis.
- To perform routine tests and suggest appropriate additional follow-up or problem solving tests where needed.
- To maintain instruments and identify and correct malfunctioning systems.
- To manage and supervise other laboratory professionals, providing clinical instruction, and continuing education where appropriate.
- To communicate effectively with other members of the health care team and with patients and their families.
- To develop and institute new methodologies and systems as the need arises.
- To be aware of the impact of external regulatory requirements, such as those of CLIA 88, OSHA, and NAACLS, and to comply with those requirements.
- To correlate results from all areas of the laboratory and relate these results to the clinical condition of the patient.
- to perform as laboratory professionals by respecting the confidentiality of patient data; maintaining neatness in personal habits, work areas, and laboratory reports; performing to the best of their abilities; following established employment policies; and assuming responsibility of their conduct as well as their work.
- To recognize the need for lifelong learning, within the field of laboratory practice and in life.

I. Facilities

1. CLS Laboratories

The Clinical Laboratory Sciences programs use instructional laboratories within the Victor F. Spathelf Center for Allied Health on the Ferris State University campus. VFS 421 is used for microbiology, immunology, and immunohematology instruction. It was designed for 16 students. For your safety, VFS 421 has a fire extinguisher, fire blanket, safety shower, eye wash station, hand washing sink, separate sinks for dirty glassware and biological staining, , and a first aid kit. VFS 422 also includes a biological safety cabinet for student and faculty use.

VFS 423 is used for clinical chemistry, hematology, coagulation, and body fluid analysis instruction. It was designed for 16 students. VFS 423 has a fire extinguisher, fire blanket, safety shower, and eye wash station, hand washing sink, a separate sink for dirty glassware, a telephone, and a first aid kit. VFS 423 also includes chemical fume hoods and storage for flammable materials.

VFS 422 is used for preparation of laboratory specimens and reagents, washing of glassware, autoclaving of microbiology media and medical waste, and other tasks. A fire

extinguisher is located just outside the room, and there is easy access to safety showers, eyewash stations, and the first aid kits in VFS 421 and 423. A telephone is located in VFS 422.

2. Classrooms

Classroom instruction takes place within the VFS building, mainly in rooms 325, 326, 328, 420, and 425. These classrooms seat from 25 – 75 students. For safety, each classroom has at least two exits. Fire alarm pulls are located at regular intervals throughout the hallways. Classrooms, laboratories, rest rooms, and hallways are furnished with fire alarms that emit both audible and visual signals.

3. Computer Resources

Computer resources with Internet access are available to students within the CLS laboratories. You will use a laboratory information system (LIS) during your simulated laboratory course during your last semester on campus. With the LIS, you will be able to print work lists, use the lists to locate specimens, and then review and validate test results when they are completed.

The CAHS computer lab provides 26 computers with Internet access. Laser printers and a scanner are available. This laboratory is staffed with student assistants, and is open Monday through Friday. Other on-campus computer labs are open additional hours.

4. Student Organization

Any student enrolled in the CLS Programs may participate in the Association of Clinical Laboratory Students (ACLS). ACLS holds regular meetings during the fall and winter semesters. Dues – paying members are invited to all ACLS functions, and may receive financial assistance to attend the meeting of the Michigan Society for Clinical Laboratory Science (MSCLS), held each April.

For information contact the organization's Faculty Advisor, Dan deRegnier.