

Dear Prospective Clinical Laboratory Science Technology Student:

We are pleased that you have indicated an interest in the Clinical Laboratory Science Technology program. These "Frequently Asked Questions" will give you information about the program that may not be available elsewhere. It may also raise additional questions which can be answered during a counseling session or contacting the Clinical Laboratory Science Technology faculty in the Division of Allied Health & Nursing (Ext. 7194).

Cordially,

James Daly  
Clinical Laboratory Science Technology  
Program Director

***Program Description:***

The Clinical Laboratory Technician (also called Medical Laboratory Technician) is a member of the Allied Health Professional team who performs many different laboratory test procedures on patient specimens. Proper treatment of a patient always depends on an accurate diagnosis, and physicians rely on test results in order to make accurate diagnoses and monitor the effects of treatment. The work includes the collection of blood samples, working with state-of-the-art clinical instrumentation, performing chemical and microscopic urine analysis, matching blood for transfusion, identifying abnormal blood cells that cause leukemia and anemia, performing blood chemistry tests such as glucose and cholesterol, and identifying infectious bacteria from patient culture specimens such as throat, spinal fluid, or urine cultures.

The Clinical Laboratory Science Technology (CLS) program prepares individuals to become certified Laboratory Technicians with the successful completion of a national certification examination following graduation. The Program is nationally accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 5600 N. River Road, Suite 720, Rosemont, IL 60018-5119 ([www.naacls.org](http://www.naacls.org)).

The Clinical Laboratory Science Technology curriculum includes course work in hematology, coagulation, immunohematology (blood bank), mycology, parasitology, immunology, serology, bacteriology, urinalysis and clinical chemistry. With each course there are college laboratory experiences which provide students the opportunity to practice laboratory procedures. There are also hospital clinical laboratory experiences which are integrated with the college laboratory providing students the real opportunity to perform laboratory procedures on patient specimens in a clinical environment.

The CLS Technology graduates are prepared to perform successfully on ASCP or NCA national certifying examinations. Over the last ten years, 97% of the graduates have passed their certifying examinations. In the same period, the CLS Technology program has ranked in the top 11% in the nation. The graduate of the program is prepared for employment in hospitals, clinics, private laboratories, physician office laboratories, research and industry.

***What personal characteristics are needed to be successful in Clinical Laboratory Science Technology?***

Students who are successful in Clinical Laboratory Science Technology are emotionally mature, academically able, highly motivated, self-disciplined and willing and able to devote a considerable amount of time to their program. They have patience, enjoy working with and serving people, have good interpersonal relationship skills, are able to follow directions, work independently, and can solve problems.

Based on job performance tasks, the entry level graduate will utilize all her/his sensory perceptions as well as mental and intellectual skills in the verbal, written and mathematical areas. Certain physical characteristics of the profession will place physical demands on the technicians.

### **Technical Standards or Essential Program Requirements**

Listed below are the technical standards or essential program requirements for students in the CLSC Technology program. *If you feel that because of a learning disability, physical disability, or mental/emotional condition you cannot fully meet any of these technical standards, it is recommended that you meet with the Clinical Laboratory Science Technology Program Director and the Office of Special Needs before enrolling in the Clinical Laboratory Science Technology Program to discuss these requirements.*

#### ***Language Arts/Communication***

##### ***Verbal***

The CLSC Technology student must:

1. speak clearly, concisely and employ correct vocabulary and grammar for communication with staff, physicians, other health care professionals, students, faculty, patients and the public.
2. give clear verbal instructions to patients prior to specimen collection.
3. effectively, confidentially, and sensitively converse with patients regarding laboratory tests.

##### ***Written***

The CLSC Technology student must:

1. transcribe laboratory test results accurately and legibly.
2. write laboratory procedures using correct grammar, spelling, punctuation, sentence structure and appropriate medical terminology.
3. write legibly.
4. independently prepare papers, prepare laboratory reports, and take paper, computer, and laboratory practical examinations.

##### ***Reading***

The CLSC Technology student must:

1. read and comprehend technical and professional materials (i.e. textbooks, magazine and journal articles, handbooks, and instruction manuals).

## ***Sensory Attributes***

### *Visual*

The CLSC Technology student must:

1. confirm patient's identity from their identification band.
2. observe laboratory demonstrations in which biologicals (i.e., body fluids, culture materials, tissue sections, and cellular specimens) are tested for their biochemical, hematological, immunological, and histochemical components.
3. be able to differentiate colors of stained specimens and color-coded evacuated collection tubes.
4. be able to employ a clinical grade binocular microscope to discriminate among fine structural and color (hue, shading, and intensity) differences of microscopic specimens.
5. characterize the color, odor, clarity and viscosity of biologicals, reagents, or chemical reaction products.
6. have the ability to read laboratory requisitions/labels.
7. be able to read laboratory procedures, instrument manuals, manufacturers' package inserts, chemical names and instructions.
8. be able to read and comprehend text, numbers, graphs, and instrument settings displayed in print and on a computer monitors (screens).
9. follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.

### *Auditory*

The CLSC Technology student must be able to hear:

1. verbal responses from patients.
2. equipment and instrument alarm systems.
3. the telephone.

### *Touch*

The CLSC Technology student must be able to:

1. perform venipunctures and micro blood collection techniques, which require the tactile discrimination of veins and vein walls.

### ***Body Mechanics and Physical Characteristics***

The CLSC Technology student must be able to:

1. move freely and safely about the laboratory.
2. reach laboratory benchtops and shelves, patients lying in hospital beds or patients seated in specimen collection chairs.
3. travel to clinical laboratory sites for practical experience.
4. perform moderately taxing continuous physical work, often required prolonged sitting, over several hours.
5. perform testing procedures, which require the use of both hands simultaneously.
6. perform testing procedures, which require delicate psychomotor skills.
7. bend, lift and carry reagent containers.
8. maneuver phlebotomy and culture acquisition equipment to safely collect valid laboratory specimens from patients.
9. control laboratory equipment (i.e. pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures.
10. use an electronic keyboard to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.

### ***Intellectual and Mental/Emotional***

#### ***Intellectual***

The CLSC Technology student must be able to:

1. possess these intellectual skills: comprehension, measurement, mathematical calculation, reasoning, integration, analysis, comparison, self-expression, and criticism.
2. use Levey-Jennings Quality Control charts, graphs and numerical tables.
3. recognize a testing or instrument problem exists and act appropriately.
4. use testing algorithms.
5. interpret normal and abnormal laboratory test results.

### *Mental/Emotional*

The CLSC Technology student must:

1. be able to manage their time and systematize actions in order to complete professional and technical tasks within realistic constraints.
2. possess the emotional health necessary to effectively employ intellect and exercise appropriate judgment.
3. be able to provide professional and technical services while experiencing the stresses of task-related uncertainty (i.e. ambiguous test ordering, ambivalent test interpretation), emergent demands (i.e. "stat" test orders), and a distracting environment (i.e. high noise levels, crowding, complex visual stimuli).
4. be flexible and creative and adapt to professional and technical change.
5. adapt to working with unpleasant biologicals.
6. support and promote the activities of fellow students and of health care professionals. Promotion of peers helps furnish a team approach to learning, task completion, problem solving, and patient care.
7. be able to draw blood specimens in the emergency room and other locations on critically ill patients.
8. be able to interact with trauma patients, chronically ill patients, acutely ill patients, and terminally ill patients of all ages.
9. provide service to all patients, regardless of age, gender, race, sexual orientation, religion, physical or mental handicap, physical condition or disease process.
10. be honest, compassionate, ethical, and responsible. The CLSC Technology student must be forthright about errors or uncertainty, must be able to critically evaluate her or his own performance, accept constructive criticism, and look for ways to improve (i.e. participate in enriched educational activities).

### ***What basic interests and academic skills are needed in the Clinical Laboratory Science Technology program?***

Students who are successful in Clinical Laboratory Science Technology enjoy performing detailed biology and/or chemistry laboratory experiments. They have a strong interest to work in some area of medicine and healthcare. They have a desire to learn how and why laboratory tests are influenced in disease (curiosity and intrigue). They have good academic skills in reading, writing, mathematics and science.

### ***What are the Clinical Laboratory Science Technology Admission Requirements?***

Admission into the Clinical Laboratory Science Technology program requires a high school diploma or G.E.D. and high school algebra or its equivalent at Lorain County Community College.

***What can I do if I have not had these courses or my academic skills are weak?***

The College offers course work through the Programs for Student Success and other divisions that can make up these deficiencies. Your counselor can recommend specific courses to fit your situation.

***How long will it take before I can start the clinical portion of my program?***

The Connections Center can give you an *estimate* of when you will be able to start the clinical portion of the Clinical Laboratory Science Technology program. We recommend that you do not make major changes in your life, such as quitting a job or moving, until you have been accepted into the clinical portion of the Clinical Laboratory Science Technology program. When your name comes up, you will be offered a place according to the criteria on the Program Application.

The Clinical Laboratory Science Technology faculty recommend that interested students who are waiting to enter the Clinical Laboratory Science Technology program clinical courses begin to take some of the non-clinical and support courses in the program such as CLSC 111, BIOG 161, CLSC 112, etc.

It is recommended that students complete their science sequence requirement no more than one (1) academic year prior to admission to the clinical program. It also is recommended that students achieve at least a grade of "C" in their science and mathematics courses.

***When does the first Clinical Laboratory Science Technology course begin?***

The three required first semester Clinical Laboratory Science Technology courses (CLSC 111, 112 and 121) begin Fall semester only.

***How will I know when a clinical place is available?***

You will be notified by mail and there will be a deadline date by which you must respond.

Your letter of notice will give you detailed instructions on the registration process. Those who register early have the largest selection of class times and clinical facilities (hospital clinical affiliates). A physical examination is a requirement for entrance into the clinical portion of the Clinical Laboratory Science Technology program. The examination is to be completed within three (3) months prior to entrance into the first clinical course.

***Can I re-enter the Clinical Laboratory Science Technology program if I withdraw?***

Yes. Students who withdraw from the CLS Technology program without completing CLSC 111 should immediately file a new Program Application. You will then be offered a place when your name comes back up on the list. Students who complete CLSC 111 or beyond and withdraw should see the Allied Health and Nursing counselor immediately to arrange for re-entry. Proficiency students, re-admits and transfers from other programs are re-admitted as places are available. Formal withdrawal procedures must be followed.

***What facilities are used for clinical training?***

The Clinical Laboratory Science Technology program is currently using EMH Regional Medical Center, Community Health Partners, and Firelands Regional Medical Center.

***Will I do all of my training at one hospital?***

Students will ordinarily do most of their training at one hospital. However, some circumstances may require exceptions to this.

***Is transportation provided to the hospital?***

No. Students must provide their own transportation, but car pooling is encouraged.

***Does the college have baby-sitting services?***

Yes. Inquiries should be made at the Child Care Center, extension 4038.

***How is the Clinical Laboratory Science Technology program set up?***

Each clinical course in the Program (CLSC 121, 122, 213, and 221) has three components:

- (1) A daytime lecture is held at the college one or two days a week.
- (2) A daytime college laboratory session is held once a week where you will learn and practice basic procedures with your instructor and a laboratory instructional assistant.
- (3) A daytime clinical experience is held at the hospital two days a week with the hours varying from 4½ to 6½ hours a day. The number of hours depends which clinical course you are enrolled in. In these clinical sessions, students work directly with the hospital staff to learn the many laboratory procedures performed in a clinical laboratory. There is also a college faculty member on-site to coordinate and evaluate the students' activities.

***How much actual patient contact will I have as a student and a practicing Clinical Laboratory Science Technician? (Will it be necessary for me to draw blood as a Clinical Laboratory Science Technician?)***

The contact a Clinical Laboratory Science Technician has with patients is primarily through the collection of venous blood specimens from children or adults and skin puncture blood specimens from infants. While learning these collection procedures is a *required* part of the program, blood collection is only a small component of the overall job of a Laboratory Technician. Do not let the fear of drawing blood be the only reason you do not consider this Program! Please make an appointment with the Program Director if you want to enroll in the Program but have concerns about the requirement to draw blood. Other than collection of blood samples, there are very few other laboratory procedures which require patient contact.

***Will I have to take classes during the summer?***

You will be required to take CLSC 123 in the summer between the first and second year of the program. This is a four (4) week course. There is also an Arts and Humanities, Social Science or Computer Information Systems elective scheduled on the CLS Technology curriculum if you have not already taken it.

***Will I be able to schedule required Clinical Laboratory Science Technology courses at times near or convenient to my other required courses?***

All first year and second year support courses have been sequenced with the first and second year CLS Technology courses. Therefore the entire curriculum can be scheduled following the five-semester sequence as it is published. Due to the length of some of the clinical hours, this may require late afternoon or evening courses. In addition, support courses can often be scheduled out of sequence from the published curriculum around your clinical courses.

***What suggestions do you have that would increase the likelihood of my being successful in Clinical Laboratory Science Technology?***

First: Make up any deficiencies you have in the basic skills of reading, writing, math and science. Your counselor is available to help you with these decisions.

Second: Take as many of the academic support courses as possible before entering the clinical program. If it is not possible to take all of the courses, try to get as many of the of the science courses out of the way as possible.

While it is entirely possible to take the entire Program over a 5-semester period without any prior completed coursework, any support courses you can complete before beginning the program will only enhance your ability to focus and succeed in your clinical courses once you are enrolled in the Program.

It is recommended that students complete their science sequence requirements no more than one academic year prior to admission to the clinical program.

Also, it is recommended that students achieve at least a grade of "C" or better in their science and mathematics courses.

Third: It is permissible to take the CLSC 111 course before you are officially enrolled in the CLS Technology Program. This course is an introduction to the profession of laboratory medicine. It will provide you with a better understanding of Clinical Laboratory Science technology and the type of work which follows in the other CLS Technology courses. Speak to a counselor if you are interested in doing this.

Students who are still in high school and placing their name on the waiting list for Clinical Laboratory Science Technology should consider the Post-Secondary Enrollment Options (PSEO) program as a way of taking a few academic courses at the college while they are still in high school.

***If I am a current High School student, which courses should I consider first?***

This should be discussed with your high school counselor and/or the College's Allied Health and Nursing counselor.

***Are there courses that must be taken before other courses?***

Yes. These courses are called prerequisites. Please refer to the Clinical Laboratory Science Technology course curriculum sheet. Students who do not meet the prerequisites will not be permitted to continue without special permission from the Clinical Laboratory Science Technology Program Director.

Remember, the prerequisite academic support courses must be taken before or along with the Clinical Laboratory Science Technology courses as co-requisites, NOT afterward.

***Can I work while I'm in the Clinical Laboratory Science Technology program?***

A general College guideline indicates that students taking 12 or more hours (full time) may work a maximum of 15 to 20 hours per week. After passing the CLSC 121 course, some CLS students find employment as phlebotomists in hospitals, physician office laboratories, private laboratories, clinics, etc.

***How many hours of outside study will I need per week?***

A general College guideline indicates that, on an average, students need two to three hours of outside study for each hour in class.

***What is the approximate cost for the program?***

The Program consists of 69 semester hours. You should consult the most recent College semester schedule to calculate the tuition based on the current per semester hour cost. Costs of the program include tuition, laboratory fees, application for admission to LCCC, health exam, books and testing fees.

***Is financial aid available for Clinical Laboratory Science Technology students?***

Financial aid is available to qualified students through the Financial Aid Office. Allied Health and Nursing students are urged to make inquiry to determine if they are eligible.