



Medical Laboratory Technology (MLT) Program

Student Handbook

**2018 – 2019
Academic Year**

(For students starting the program in July 2018)

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**SOUTHEAST COMMUNITY COLLEGE
MEDICAL LABORATORY TECHNOLOGY PROGRAM**

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ACCREDITATION: The Medical Laboratory Technology Program is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS), 5600 N. River Road, Suite 720, Rosemont, Illinois 60018-5119, 773.714.8880, <http://www.naacls.org>

Mission Statements & Core Values

Mission

The mission of Southeast Community College (SCC) is to empower and transform its students and the diverse communities it serves. The College provides accessible, dynamic, and responsive pathways to career and technical, academic transfer, and continuing education programs. Student success and completion is maximized through collegiate excellence, exemplary instruction, comprehensive student support services, enrichment programs, and student-centered processes. SCC is committed to a proactive and evidence-based approach that continually assesses and responds to student, community, and employer demand for higher education.

Core Values

Southeast Community College adheres to a set of core values that drive the decisions and actions of the institution.

1. **Excellence** – Commitment to the highest level of performance in all facets of the College’s programs, services, and operations through effective investment and support of all assets.
2. **Integrity** – Continuous pursuit of fulfillment of mission and goals through transparency and ethical practices in all College operations.
3. **Innovation** – Commitment to inquiry and the respectful challenging of assumptions to promote creativity, alternative points of view, and opportunities for ongoing discovery.
4. **Inclusion** – Promotion of opportunities and advancement for a diverse and dynamic student, faculty/staff, and community population through the creation of a positive, compassionate, and reflective culture.
5. **Stewardship and Accountability** – Commitment to investment in appropriate resources in fulfillment of the College’s mission and goals and reliance on responsible management of human, physical, and financial resources.

Health Sciences Division Mission

The mission of the Division of Health Sciences at Southeast Community College is to offer to all persons state of the art programs in a variety of health occupations.

Medical Laboratory Technology Mission

The mission of the Medical Laboratory Technology Program is to prepare students to become competent Medical Laboratory Technicians.

HEALTH SCIENCES DIVISION

ACADEMIC HONESTY

Academic honesty is a core principle of learning and scholarship. When you violate this principle, you cheat yourself of the confidence that comes from knowing you have mastered the targeted skills and knowledge. You also hurt all members of the learning community by falsely presenting yourself as having command of competencies with which you are credited, thus degrading the credibility of the college, the health program, and your fellow learners who hold the same credential.

All members of the learning community share an interest in protecting the value, integrity, and credibility of the outcomes of the learning experience. Faculty have the responsibility to censor behaviors that interfere with this effort.

The following behaviors will be subject to disciplinary action:

Plagiarism- presenting someone else's words, ideas, or data as your own work.

Fabrication- using invented information or falsifying research or other findings.

Cheating – misleading others to believe you have mastered competencies or other learning outcomes that you have not mastered. Examples include, but are not limited to:

- Copying from another learner's work
- Allowing another learner to copy from your work
- Using resource materials or information to complete an assessment without the permission of your instructor
- Collaborating on an assessment (graded assignment or test) without permission of the instructor
- Taking a test for someone else or permitting someone else to take a test for you

Academic Misconduct- other academically dishonest acts such as tampering with grades, taking part in obtaining or distributing any part of an assessment, or selling or buying products such as papers, research, projects, or other artifacts that document achievement of learning outcomes.

O/Hoe/faculty and staff (HSD 11/2010, rev. 2015)

SOCIAL MEDIA STATEMENT

SCC Health Sciences recognizes that many students choose to participate in social media and networking sites. This includes Facebook, LinkedIn, Twitter, Instagram, Snapchat, and other websites, blogs and networking sites. Social media is a powerful communication tool that can have significant impacts. It can be positive, fun, and can lead to job opportunities; it can also negatively impact one's reputation and the organizations one represents. You must be mindful that anything you post on a social media site may be seen by anyone, including patients, classmates, instructors, and prospective employers. Inappropriate social media postings could form the basis for disciplinary action against you by the College.

It is the position of the Health Sciences Department that all students involved in health care have a moral, ethical and legal responsibility to maintain individuals' rights to privacy. HIPAA protects patient privacy and includes individually identifiable information in any form where the information could identify an individual by name, medical condition, demographics or other means. Students are expected to act with integrity and to respect the privacy rights of others. Social media postings regarding patient information constitute a violation of patient confidentiality and HIPAA. Such postings are prohibited and subject a student to discipline, up to and including dismissal from a program. Along these lines, students are reminded to use caution even when sharing locations or commenting on images. Students are directed to not post or share photographs from clinical and laboratory settings. Students must also avoid referencing clinical sites, clinical experiences, patients, and patients' family members on social media sites in any manner that violates the confidentiality of patients or their families.

Reviewed and Approved by Legal 1/10/2017

SOUTHEAST COMMUNITY COLLEGE HEALTH SCIENCES DIVISION STUDENT AND CLINICAL FACULTY DRUG SCREENING INFORMATION AND PROCEDURES

Education of Health Science students at Southeast Community College requires collaboration between the college and clinical facilities. The educational process for these students cannot be completed without a quality clinical rotation. The college shares an obligation with the clinical facility to protect all patients from harm due to students who are under the influence of illegal drugs or alcohol while in the clinical facility. The clinical facilities require that Southeast Community College obtain a negative drug screen on each student prior to that student arriving at the clinical facility for his/her clinical rotation and that such students be drug and alcohol free while at a clinical facility.

Guidelines for Drug Testing

1. Students admitted to a Health Sciences program at Southeast Community College that requires a clinical rotation at a contracted healthcare facility will be required to submit to initial drug and alcohol testing prior to the first clinical rotation.
2. Drug and alcohol testing will be conducted according to the procedures and standards specified by the affected clinical facility. Only drug and alcohol tests conducted by college authorized agencies will be accepted. Cost of the drug test (\$35.00) will be paid by the student as part of student fees that will be charged the 6th quarter of the program.
3. Further drug testing and or alcohol testing may be required of the student for cause. This testing will be required at the discretion of the college or the clinical agency. Cost (\$35.00) of the drug or alcohol testing will be the responsibility of the student.
4. All Health Science students will be tested for the following drug categories: amphetamines/methamphetamines, barbiturates, benzodiazepines, cocaine and metabolites, marijuana metabolites, opiates, phencyclidine, and propoxyphene. This list is subject to change. Testing for additional substances may occur based on clinical affiliation agreement requirements.
5. The student must provide written consent to provide specimens for the purpose of analysis and release of information to Southeast Community College. If the student is under eighteen (18) years of age, the parent or legal guardian must sign the drug and alcohol testing consent form in addition to the student. The consent form will be provided by the authorized agency the day of the appointment.
6. Students have the right to refuse to consent to drug and alcohol testing. However, students who decline will not be able to start or complete a clinical rotation and will be unable to achieve the required clinical experience for that program/course. The refusal to consent to drug or alcohol testing may result in a student being dismissed from the program.
7. The student will be provided with an instructional sheet of acceptable drug screening vendors, payment instructions, and procedural information.
8. Notification indicating a “Negative” drug screen or “Further Testing Required” will be sent to the Dean of Health Sciences at Southeast Community College.
9. The Medical Review Officer from the authorized agency will contact the student directly if “Positive” or “Further Testing Required” is noted.
10. The results will be reviewed by the Dean of Health Sciences for verification and placement purposes.

11. Students will not be allowed to hand deliver drug screening test results to the Dean of Health Sciences.
12. Any student who tests positive for a prohibited drug will be given the opportunity to contest the results, if the failure is due to justifiable prescription drug use. If the failure is due to justifiable prescription drug use, the student may be permitted to participate in the clinical program of the affected facility if it is determined that the student may safely do so without jeopardizing patient safety. It is the student's responsibility to provide proper documentation if he/she has failed the drug screen due to justifiable drug use.
13. If the positive test is not due to justifiable prescription drug use, the student will meet with the Dean of the Health Sciences Division to discuss withdrawal from the designated Health Program. Depending on the circumstances, a positive drug or alcohol test may make it impossible to place a student in a clinical setting and could result in the student being dismissed from the program.
14. Students could apply for re-admission into a health program. The College will determine in its discretion whether a student will be readmitted based on among other things the circumstances relating to the failed drug or alcohol test and the ability of the College to place the student in an appropriate clinical setting. Re-admission would be based upon the next possible program in-take date (approximately 1 to 2 quarters) and completion of additional drug testing.
15. Depending on the circumstances, the results of a positive drug or alcohol test may be communicated to law enforcement authorities, the Nebraska Department of Health and Human Services, or other state agencies.
16. The cost of drug and alcohol testing is provided for informational purposes only and is subject to being increased from time to time.

DESCRIPTION OF THE MEDICAL LABORATORY TECHNOLOGY PROGRAM

The Medical Laboratory Technology student obtains the knowledge and skills necessary to function adequately and competently when performing laboratory procedures in medical clinics, hospitals, and other laboratory settings.

The Medical Laboratory Technology education program is designed to provide various learning opportunities to allow students to achieve academic and personal growth. Clinical training experience is essential for the student to gain practical application of medical laboratory techniques.

The Medical Laboratory Technology Program curriculum requires numerous science and laboratory courses including chemistry, microbiology, human physiology, as well as clinical/medical laboratory sciences. Courses in specialized medical laboratory techniques provide the student with knowledge and skills to perform laboratory testing procedures on patient body fluids and specimens. Students obtain additional laboratory experiences and learning opportunities within various hospital and clinic laboratories.

The students will become actively involved in their learning experiences. The classes are small to accommodate an effective learning environment. There are no more than 26 students in lecture and 13 students in a laboratory section so students will have adequate instructor attention. The demands and responsibilities placed upon the students will increase as the program progresses.

The Medical Laboratory Technology Program will award the successful graduate an Associate of Applied Science degree, and students will be eligible to take the national certifying examination of the American Society for Clinical Pathology (ASCP) Board of Certification.

Graduates of this program may continue their education in medical laboratory science by transferring these two years of credits to the Clinical Laboratory Science Program, University of Nebraska Medical Center.

AWARD

Associate of Applied Science Degree

113 Quarter Credits

The issuing of the degree is **not** contingent upon the student passing any type of external certifying examination.

Note: The time required to complete the Associate of Applied Science Degree in Medical Laboratory Technology is 24 months.

UNFORSEEN CLOSURE OF THE MEDICAL LABORATORY TECHNOLOGY PROGRAM

In the event the Medical Laboratory Technology Program were to be discontinued, the students enrolled in the program would be guaranteed the opportunity to complete the required curriculum. A teach-out plan would be developed according to the situation and would be implemented in a way that had the least impact on enrolled students.

SCHOLARSHIPS AVAILABLE TO MEDICAL LABORATORY TECHNOLOGY STUDENTS

Professional Scholarships:

Students may apply for these scholarships in the final clinical year of education.

American Society for Clinical Pathology \$1000 National Scholarship

The Siemens Healthcare Diagnostics Student Scholarship

The Siemens Healthcare Diagnostics Legacy Student Scholarship

American Society for Clinical Laboratory Sciences National Scholarship

Alpha Mu Tau Honorary Fraternity National Scholarship

ASCLS-NE MLT Scholarship

Great Plains Chapter-Clinical Laboratory Management Association MLT Scholarship

Alyce Watson SCC Scholarship

*Nancy Mehuron MLT Scholarship

*(applicable to 1st or 2nd year MLT student)

SCC Scholarships: Students may apply for SCC scholarships while attending SCC.

COURSE SCHEDULE 2017-2018

COURSE	Course Number	Quarter Credits	GRADE	Term / Year Completed
FIRST QUARTER (Summer)				
Medical Laboratory Procedures & Lab	MEDT1101/1101L	2.5		
**Procedures in Phlebotomy	MEDT1100	3.0		
*Intro to Sociology (or higher)	SOCI1010	4.5		
*Intermediate Algebra (or higher)	MATH1100	4.5		
		14.5		
SECOND QUARTER (Fall)				
Medical Laboratory Measurements	MEDT1201	2.0		
Medical Microbiology I & Lab	MEDT1213/1213L	4.0		
*General Chemistry I & Lab (or higher)	CHEM1090/1090L	6.0		
*Oral Communications	SPCH____	4.5		
		16.5		
THIRD QUARTER (Winter)				
Medical Microbiology II & Lab	MEDT1313/1313L	4.0		
Hematology I & Lab	MEDT1332/1332L	4.0		
*Human Physiology & Lab	BIOS2130/2130L	6.0		
		14.0		
FOURTH QUARTER (Spring)				
Instrumental Analytical Chemistry & Lab	MEDT2125/2125L	2.5		
Medical Microbiology III & Lab	MEDT1413/1413L	4.0		
Hematology II & Lab	MEDT1432/1432L	4.0		
*Written Communication (or higher)	ENGL1010	4.5		
		15.0		
FIFTH QUARTER (Summer)				
Urinalysis & Lab	MEDT2512/2512L	2.0		
Immunohematology I & Lab	MEDT2532/2532L	2.0		
Medical Laboratory Chemistry I & Lab	MEDT2552/2552L	4.0		
Immunology	MEDT2561	2.0		
Hemostasis	MEDT2581	1.0		
Immunology & Hemostasis Lab	MEDT2582	2.0		
		13.0		
SIXTH QUARTER (Fall)				
Immunohematology II & Lab	MEDT2632/2632L	4.0		
Medical Laboratory Chemistry II & Lab	MEDT2652/2652L	4.0		
Preclinical Orientation I	MEDT2681	2.0		
Clinical Education I	MEDT2690	2.0		
		12.0		
SEVENTH QUARTER (Winter)				
Clinical Education II	MEDT2701	10.0		
Seminar I	MEDT2702	2.0		
Preclinical Orientation II	MEDT2703	4.0		
		16.0		
EIGHT QUARTER (Spring)				
Clinical Education III	MEDT2801	10.0		
Seminar II	MEDT2802	2.0		
		12.0		

*Classes can be taken at any time.

**Class can be taken prior to the program or during the 1st or 2nd quarters.

Courses that are recommended, but not required:

If a student would like more courses to take, some courses we recommend are listed below. Please note, these courses are NOT required.

Basic Medical Terminology	MEDA 1101	2.0 Credit Hours
Medical Calculations	MEDA 1407	1.0 Credit Hours
Basic Pharmacology	MEDA 1406	2.0 Credit Hours
Comprehensive Medical Terminology	HLTH 1060	4.5 Credit Hours
Communication in Allied Health	MEDA 1202	4.5 Credit Hours
Medical Law and Ethics	MEDA 1203	3.0 Credit Hours
Medical Diseases	MEDA 1404	4.5 Credit Hours
Insurance for the Medical Office	MEDA 1405	3.0 Credit Hours
Applied Statistics	MATH 2170	4.5 Credit Hours
General Chemistry II	CHEM 1100	6.0 Credit Hours
Human Anatomy	BIOS 1140	6.0 Credit Hours
Organic Chemistry I	CHEM 2510	6.0 Credit Hours
Microsoft Excel	INFO 1131	1.5 Credit Hours
General Genetics	BIOS 2410	6.0 Credit Hours

MEDICAL LABORATORY TECHNOLOGY PROGRAM OBJECTIVES (GOALS)

At completion of the Medical Laboratory Technology program, the medical laboratory technician will:

1. Perform routine clinical laboratory tests (such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, molecular, and other emerging diagnostics) as the primary analyst making specimen oriented decisions on predetermined criteria, including a working knowledge of critical values.
2. Possess communication skills which extend to frequent interactions with members of the healthcare team, external relations, customer service and patient education.
3. Recognize and perform diverse functions in areas of pre-analytical, analytical, and post-analytical processes.
4. Recognize and perform responsibilities for information processing, training, and quality control monitoring.
5. Recognize the significance of accurate and reliable data when performing testing procedures in the clinical laboratory.
6. Possess the knowledge and skills appropriate to successfully pass a national certifying examination for Medical Laboratory Technicians.
7. Develop the ability to assess his/her competencies and achievements through periodic evaluation processes

MEDICAL LABORATORY TECHNOLOGY PROGRAM ASSESSMENT PLAN

The Medical Laboratory Technology Program participates in SCC's college-wide assessment program for the improvement of student learning. By doing so we are able to better understand the quality of student learning, to inform teaching, and to improve institutional quality. The MLT faculty align the plan with the program's objectives so we can systematically assess the effectiveness of the program.

The following is the plan for the three-year cycle that runs from July 2016-June 2019.

- GOAL #1:** Students will be able to perform clinical laboratory tests as the primary analyst, making specimen oriented decisions on predetermined criteria.
- OUTCOME 1.1:** Students will demonstrate knowledge and competencies for Medical Laboratory Technology by passing the American Society for Clinical Pathology Board of Certification (ASCP-BOC) national certification examination.
- TOOL & BENCHMARK 1.1A:** 100% of students taking the BOC examination will achieve a minimum passing scaled score (MPS) of 400 or above on their first attempt.
- OUTCOME 1.2:** Students will perform medical/clinical laboratory procedures that will demonstrate the technical skills to fulfill the role as a Medical Laboratory Technician.
- TOOL & BENCHMARK 1.2A:** 100% of students will successfully perform and obtain acceptable results on the Immunohematology I laboratory practical examination with a minimum passing score of 75%.
- GOAL #2:** Students will be able to recognize the significance of accurate and reliable data when performing testing procedures in the clinical laboratory.
- OUTCOME 2.1:** Students will recognize critical values and appropriately and accurately document them on student and patient reports.
- TOOL & BENCHMARK 2.1A:** 100% of students will identify critical values in Medical Laboratory Chemistry I a minimum of 75% of the time.
- OUTCOME 2.2:** Students will assess the accuracy and reliability of patient results.
- TOOL & BENCHMARK 2.2A:** 100% of students will attain a minimum of 75% on the graded Sysmex run in Hematology I.
- GOAL #3:** Students will be able to practice communication skills which will extend to frequent interactions with members of the healthcare team, external relations, customer service, and patient education.
- OUTCOME 3.1:** Students will demonstrate personal affective behaviors consistent with professional and ethical expectations for a Medical Laboratory Technician.
- TOOL & BENCHMARK 3.1A:** 75% of students will pass the Urinalysis clean catch-midstream explanation with a 100%.
- OUTCOME 3.2:** Students will demonstrate professionalism when interacting with others at clinical sites.
- TOOL & BENCHMARK 3.2A:** 100% of students will receive a "3" or higher on "interpersonal relations" on the phlebotomy affective evaluation.

- GOAL #4:** Students will apply problem solving skills in the medical laboratory.
- OUTCOME 4.1:** Students will examine data, evaluate evidence, and reach logical conclusions in a medical laboratory.
- TOOL & BENCHMARK 4.1A:** 100% of students will score a “3” or higher on “Judgement and Analytical Ability” on the Chemistry affective evaluation.
- OUTCOME 4.2:** Students will correlate laboratory tests used in diagnosis and treatment to disease process.
- TOOL & BENCHMARK 4.2A:** 100% of students will attain a minimum of 75% on the graded Immunohematology II case study assignment.

Medical Laboratory Technology Program DACUM (Developing A Curriculum)

A wealth of data is gained by preparing a DACUM research chart. An initial listing of the tasks performed was prepared by organizing and convening a DACUM occupational workshop of persons who were considered to be expert Medical Laboratory Technology professionals.

The committee, relying on their own knowledge and experience, and with the guidance of trained DACUM facilitators, identified the duties and tasks that were considered important to them, individually and collectively. They also identified lists of: (1) general knowledge skills, (2) worker behaviors, (3) tools, equipment, supplies and materials, and (4) future trends and concerns. A summary of the DACUM findings is below. A full copy of the report can be requested by contacting Lynnett Paneitz, MLT Program Chair.

DACUM Panel:

Deb Royal, UNL Veterinary Diagnostic Center
Kandi Dion, Arthritis Center of Nebraska
Heidi Doher, Bryan Health
Jerel Katen, Community Memorial Hospital
Wendy Zielke, CHI Health Laboratory
Karen Griffin Sieber, University Health Center, Nebraska Medicine
Eric Arreguin, CHI Health Laboratory

DACUM Facilitators:

Lynnett Paneitz
Charlotte Pasco

DACUM Summary:

After the MLT DACUM process of 2016, it has been decided that no major curriculum changes will be made at this time. Discussions with the faculty, dean of health sciences, and the advisory committee reveal that we are on track in that we produce competent, entry-level medical laboratory technologists. When we compared our DACUM chart with our Assessment Plan for 2013-2016 we found that every goal and outcome of the plan coincided with the DACUM panel's suggestions of duties and tasks. The DACUM chart does mirror that small, incremental budget increases will be necessary to stay up to date with current technology in the clinical world. These updates are necessary to ensure that we continue to be able to teach the students using the appropriate equipment that they will see when they graduate. The MLT program is accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). NAACLS Standard II looks at assessment and continuous quality improvement. The DACUM chart matches up well with this in that it is a tool for systematic assessment and program assessment and modification. Standard VIII looks at curriculum requirements. Review of the chart indicates that we are in line with the curriculum requirements, which not only indicate the theory that needs to be taught, but which also indicate that tasks such as application of safety and governmental regulations compliance and principles and practices of professional conduct and the significance of continuing professional development be taught.

Medical Laboratory Technology Program Clinical Affiliates

COOPERATIVE AGREEMENTS: The Medical Laboratory Technology Program has affiliation agreements with twenty-four affiliates providing a variety of educational opportunities for students in the clinical laboratory. Each clinical affiliate has a representative to the Advisory Committee for the MLT program. Affiliation agreements have been signed by each of the following*:

Clinical Affiliate	Advisory Committee Representative
Arthritis Center of Nebraska, Lincoln	Ryan Nelsen
Beatrice Community Hospital, Beatrice	Angie Janssen
Bryan Health Medical Center East & West, Lincoln	Michaela Erixson
CHI Health Laboratory, Omaha	Anita Smith
CHI Health Nebraska Heart Hospital, Lincoln	Juliana Cordero
CHI Health St. Elizabeth Hospital, Lincoln	Maggie Horak
CHI Health St. Mary's Hospital, Nebraska City	Donna Sulka-Smith
Columbus Community Hospital, Columbus	Yvette Webb
Community Memorial Hospital, Syracuse	Jerel Katen
Crete Area Medical Center, Crete	Shanan Fuhrman
Faith Regional Health Services, Norfolk	Kim Rusk
Lincoln Internal Medicine Associates, Lincoln	Beverly Tranel
Madonna Rehabilitation Hospital, Lincoln	Brandon Paneitz
Memorial Health Care Systems Hospital/Clinic, Seward	Lynette Pallas
Nebraska Hematology-Oncology, P.C., Lincoln	Cindy McGill
Physicians Laboratory Services, Inc., Lincoln and Omaha	Dr. Robert Bowen
Syracuse Area Health, Syracuse	Jerel Katen
Southeast Nebraska Cancer Center, Lincoln	April Yang
VA Nebraska-Western Iowa Health Care System, Lincoln	Pam Kopp
York General Health Care Services, York	Bill Bolte
Independent Consultant/Community Member*	Dr. Gregory Post

Dr. Gregory Post is not affiliated with a clinical site for the Medical Laboratory Technology Program. There is not an affiliation agreement in place.

Southeast Community College
Medical Laboratory Technology Program
Technical Standards
(Functional Abilities Essential for Medical Laboratory Technicians)

The purpose of the Medical Laboratory Technology (MLT) Program is to educate students to meet the program outcomes and to ensure that no graduate will pose a danger to themselves, classmates, instructors, or patients. The MLT students will receive both classroom and clinical instruction in multiple laboratory areas (Phlebotomy, Clinical Chemistry, Hematology & Coagulation, Microbiology, Immunochemistry, and Transfusion Services) and will be required to demonstrate competency in each area.

In order to provide safe patient care and to ensure the safety of classmates, and instructors in the MLT program, the student must be able to demonstrate, with or without reasonable accommodation, physical, cognitive, and behavioral abilities required for satisfactory completion of all aspects of the program curriculum and clinical site requirements. Any applicant who has met the necessary academic requirements and can, with or without reasonable accommodation, meet and/or perform the Medical Laboratory Technology Program Technical Standards will be accepted for admission.

Students admitted to the MLT program gain experience in many settings that can be physically demanding, e.g., hospital laboratories, physician clinic laboratories, reference laboratories, and school settings. During each clinical experience, the MLT student is assigned to a laboratory area which may include working with hazardous and biohazardous material, and direct patient care. Students will be expected to adhere to the Health Insurance Portability and Accountability Act (HIPAA) of 1996 which safeguards patient confidentiality.

Transportation to and from health care facilities is the responsibility of the student.

Please carefully read the Medical Laboratory Technology Program Technical Standards

Functional Ability	Standard (With or without reasonable accommodations, the student will demonstrate the following)	Examples of Required Activities
Physical Endurance	Physical stamina sufficient to remain continuously on task for up to a 12- hour clinical shift while standing, sitting, moving, lifting, and bending to perform laboratory testing and patient care activities	<ul style="list-style-type: none"> • Ability to move about the work area or be upright/seated for extended periods of time; perform laboratory testing while upright, moving from bench to bench, help position patients
Physical Strength	Physical strength sufficient to perform full range of required laboratory testing and phlebotomy	<ul style="list-style-type: none"> • Lift/move heavy objects
Gross Motor Skills	Gross motor skills sufficient to provide the full range of safe and effective patient care activities and to be able to move about freely and maneuver safely and effectively in a clinical laboratory	<ul style="list-style-type: none"> • Move safely within confined spaces such as a clinical laboratory or a treatment room • Assist with physical tasks related to patient care (e.g., turning or lifting patients) • Ability to use hands or prosthetic devices with coordination

Functional Ability	Standard (With or without reasonable accommodations, the student will demonstrate the following)	Examples of Required Activities
Fine Motor Skills	Fine motor skills sufficient to perform manual psychomotor skills	<ul style="list-style-type: none"> • Ability to manipulate small objects (e.g., pipettes, test tubes, needles, syringes) • Pipette small amounts of sample with accuracy • Perform phlebotomy using various methods (capillary puncture, syringe, vacutainer, winged collection set) • Use a microscope
Mobility	Physical ability sufficient to maneuver in small spaces and move from room to room; full range of motion to twist/bend, stoop/squat, reach above shoulders and below waist and move quickly; manual and finger dexterity; and hand-eye coordination to perform laboratory activities and phlebotomy	<ul style="list-style-type: none"> • Move around safely in laboratory work area and treatment areas • Position oneself in the environment to perform patient testing and phlebotomy without obstructing the position of the other team members or equipment
Hearing	Auditory ability sufficient to perform laboratory testing and phlebotomy	<ul style="list-style-type: none"> • Detect a ringing phone and communicate with other healthcare providers • Detect alarms (timers, instruments, fire alarms) • Recognize when assistance is needed
Visual	Visual ability sufficient for accurate observation and performance of laboratory testing and patient care	<ul style="list-style-type: none"> • Read small print on print-out tapes and instruments • Ability to perform laboratory testing that requires discriminating between colors • Ability to perform macroscopic analysis • Ability to see a single image in a microscope • See objects up to 20 feet away
Tactile	Tactile ability sufficient for performing laboratory testing and phlebotomy	<ul style="list-style-type: none"> • Select veins for phlebotomy procedures
Smell	Olfactory ability sufficient to detect laboratory odor	<ul style="list-style-type: none"> • Detect significant microorganisms from plates and containers • Detect smoke
Emotional/Behavioral Professional Attitudes and Interpersonal Skills	Emotional stability and appropriate behavior sufficient to assume responsibility/accountability for actions	<ul style="list-style-type: none"> • Establish rapport with patients, instructors and colleagues • Respect and care for persons whose appearance, condition, beliefs and values may be in conflict with their own

Functional Ability	Standard (With or without reasonable accommodations, the student will demonstrate the following)	Examples of Required Activities
	<p>Present professional appearance and demeanor; demonstrate ability to communicate with patients, supervisors, co-workers to achieve a positive and safe work environment. Follow instructions and safety protocols</p> <p>Honesty and integrity beyond reproach</p>	<ul style="list-style-type: none"> • Deliver care regardless of patient’s race, ethnicity, age, gender, religion, sexual orientation or diagnosis • Conduct themselves in a composed, respectful manner in all situations and with all persons • Work with teams and workgroups • Demonstrate emotional skills to remain calm and maintain professional decorum in an emergency/stressful situation • Demonstrate prompt and safe completion of all patient care responsibilities • Adapt rapidly to changing environment/stress • Exhibit ethical behaviors and exercise good judgment
Communication	Oral communication skills sufficient to communicate in English with accuracy, clarity and efficiency with patients, their families and other members of the health care team, including non-verbal communication, such as interpretation of facial expressions, affect and body language	<ul style="list-style-type: none"> • Process, comprehend and communicate patient and laboratory information effectively, legibly, and in a timely manner • Give and follow verbal directions to and from other members of the healthcare team and participate in health care team of discussions of patient care • Convey information to patients and others as necessary to teach, direct and counsel individuals in an accurate, effective and timely manner • Recognize and report critical patient information to other caregivers
Conceptual/Spatial Abilities	Conceptual/spatial ability sufficient to comprehend three-dimensional and spatial relationships	<ul style="list-style-type: none"> • Comprehend spatial relationships in order to properly perform phlebotomy and move around in a medical laboratory
Cognitive/Quantitative Abilities	Reading comprehension skills and mathematical ability sufficient to understand written documents in English and solve problems involving measurement, calculation, reasoning, analysis, and synthesis	<ul style="list-style-type: none"> • Collect data • Analyze, synthesize, and interpret patient and laboratory data • Transfer knowledge from one situation to another • Report/chart correct patient data • Accurately process information on physicians’ orders, reagent containers, printed documents, flow sheets, graphic sheets, policy and procedure manuals and medical records • Monitor equipment calibrations and maintenance

Functional Ability	Standard (With or without reasonable accommodations, the student will demonstrate the following)	Examples of Required Activities
Clinical Reasoning	Ability to correlate a patient's laboratory results to their diagnosis and the ability to reason across time about a patient's changing laboratory results	<ul style="list-style-type: none"> Evaluate patient or instrument responses, synthesize data, and draw sound conclusions
Flexibility	Adapt to Medical Laboratory Technology program course scheduling policy	<ul style="list-style-type: none"> Available to work the hours of an assigned schedule which could include any shift and any day of the week

MEDICAL LABORATORY TECHNOLOGY STUDENT GUIDELINES AND REQUIREMENTS

A. ORIENTATION REQUIREMENTS:

In addition to the general admission requirements of the college, the *Special Requirements* stated below must be met.

1. Complete program orientation after being accepted into the program.

B. ACADEMIC REQUIREMENTS:

1. Students must maintain acceptable academic standing to remain in the MLT Program. All courses in the curriculum beginning with the MEDT prefix must be completed with a minimum grade of 75% (C+) or higher. Related science and general education courses required for graduation in the MLT Program must be completed with a minimum grade of 70% (C) or higher.
2. Students are assigned an MLT faculty advisor upon admission into the program. The program director communicates which courses students need to register for each quarter. It is up to the students to meet with his/her faculty advisor should they have any questions, at any time, during the program.
3. All program courses required in Quarters One through Six (1-6) in the curriculum must be successfully completed before beginning Clinical Education II (MEDT2701) in Quarter Seven (7). Minimum cumulative grade point average (GPA) of 2.5 on a 4.0 grading scale is required to graduate from the MLT Program.
4. Final grades for MEDT prefix courses are not rounded up to the nearest whole number (ex. 74.6 is not rounded to 75%).
5. A student may be dismissed from the Program due to:
 - Safety concerns
 - Poor academic performance
 - Excessive absenteeism
 - Disciplinary reasons
 - Cheating
 - Any other situation deemed necessary by MLT Program Faculty
6. To ensure that the student has sufficient skills and knowledge to begin Clinical Education II and III (MEDT2701 and MEDT2801), the student must complete the MEDT sequence of core program courses in the quarters immediately preceding the beginning of Clinical Education II and III.
7. If the student does not attain the minimum required grade in any of the MEDT courses in the sequence, the student will be withdrawn from the MLT Program. The student who has been withdrawn for academic or behavioral performance or who personally elects to withdraw from the program may have the option **one time** to re-enter the program and repeat the sequence of MEDT courses, if space allows. After two attempts to complete the MLT program a student will not be allowed to enroll in the program, indefinitely. If a student does not attain the minimum grade for a course he/she will have to repeat that course. Courses that were successfully completed will not need to be repeated. However, the student will have to show technical competency in those areas in order to continue progressing through the program. Showing technical competency will be completed based on an agreement between the student and MLT faculty. This may require time outside of normal classes.
8. **Credit by Examination:**

- a. If a student elects to test out or is taking an MEDT course for a second time and elects to test out of the MEDT course, the student must attain a 75.0% (C+) or higher on the written final examination and a minimum of 75.0% (C+) or higher on the laboratory practical. The student must successfully pass the written final exam before the laboratory practical will be given. If the student does not attain the minimum 75.0 % (letter grade) scores, the student must register for both the lecture and laboratory. The student must complete the *Credit by Examination* form, register for the testing out of the course and pay the fee (0.5 tuition) to SCC **prior** to the "testing out" of a course; before any exams or practicals are given. If a student has attempted a course and did not earn a passing grade, the student will not be able to test out of that course at a later date. **(NOTE: only MEDT1100, MEDT1101, and MEDT1201 may be tested out; MEDT2561 may be tested out if taken as pre-MLS.)**
 - b. If the student successfully completes the testing out for a course, the student will receive a grade of "PX" (Pass by Examination) and will not be required to take the class. If the student does not successfully meet the requirements for *Credit by Examination* of a course as stated above, then the student must register for the course and pay the full tuition for the course.
 - c. The credits on the student's transcript for taking the course the first time will be removed and the first grade will no longer be in the cumulative G.P.A. The "PX" for testing out and passing the course will then be the final grade for the course which carries the credits but no points towards the cum G.P.A.
9. Students may be permitted to keep their written exam/quizzes, laboratory practical worksheets, and graded laboratory exercises for their own academic purposes, at the discretion of the instructor. Final written exams, laboratory practicals, and selected case studies are not released. Exams retained by instructors are available for students to view anytime while in the program. Make an appointment with the instructor to view past exams. The MLT Program faculty consider the use of materials from previous MLT declared students or graduates as cheating.
 10. A minimum cumulative GPA of 2.5 is required to graduate from the MLT program.

C. ATTENDANCE REQUIREMENTS

It is a recognized fact that regular and punctual class attendance is an important aspect of the educational process for development of sound work habits and maintenance of a record that is acceptable to future employers. By being absent from class, the student misses both the content of a particular session and the continuity of the course. Occupational training requires that the student learn specific procedural tasks and the information associated with those tasks. Therefore, punctual and regular attendance is required in all scheduled classes, laboratories, and clinical rotations. These requirements apply to all MEDT courses required for the MLT Program. **Emails are not acceptable as notification for absences or tardies.**

1. **Lecture Sessions and Absences:**
 - a. Three consecutive days/periods of absence without notification to the MLT Program faculty will be grounds for immediate dismissal from the Program. Any time a student is absent from an MLT class or laboratory, he/she must telephone a message to the MLT Program faculty prior to the beginning of class or laboratory on the day that the absence occurs. The telephone numbers are **Lynnett Paneitz (402-437-2760), Tiffini Bailey (402-437-2761), Kasey Edwardson (402-437-2762), and _____ (402-437-2763)**
 - Only those absences for which such notification is received will be considered "excused".
 - An excused absence will still count as an absence.

- b. If a class meets once/week, more than one excused absence is considered excessive. For each absence over one, the student's final lecture grade average will be reduced by 5%. This may lower the student's final course grade. If a reduction in the lecture grade keeps the student from obtaining a 75% in the lecture portion of the course, the student will not pass the course.
- c. If a class meets two or more times/week or once a week in a two hour time block, more than two excused absences is considered excessive. For each absence over two, the student's final lecture grade average will be reduced by 5%. If a reduction in the lecture grade keeps the student from obtaining a 75% in the lecture portion of the course, the student will not pass the course.

2. **Exams:**

- a. If a student is absent for an exam/quiz at the scheduled time, the student must take the exam/quiz the first day upon returning to class to receive full credit for the exam/quiz. Each day the student delays taking the exam/quiz will result in a reduction of the exam/quiz grade by 10%.
- b. **FINAL EXAMS** must be taken on the date and time scheduled.
- c. No retesting will be allowed on EXAMS.

D. NOTICE OF ABSENCE:

Special requests for time off from classes, laboratories, or clinical rotations must be made prior to the absence. A "Notice of Absence" form must be completed at the time such a request is made. Requests should be made at least one week prior to the leave to allow time for arrangements for make-up work. Failure to follow this procedure may result in immediate termination from the MLT Program.

E. ABSENCES AND TARDIES:

Excused absences may be granted for personal or immediate family illness, funerals, etc. Students who miss more than five consecutive days because of illness may be asked to submit written permission from their personal physician before being allowed to return to classes or clinical education. Appointments with physicians, dentists, etc., should be made outside of school hours.

1. **Laboratory Sessions and Absences:**

- a. Absences from Laboratory Sessions must be made up. If a student is absent from a Laboratory Session, he/she must make up the missed Laboratory Session before the student will be allowed into any subsequent Laboratory Session in that course. More than one absence from the Laboratory Session in a course is considered excessive absenteeism. For each absence over one, the student's final laboratory grade will be reduced by 5%. This may lower the student's final course grade. If a reduction in the laboratory grade keeps the student from obtaining a 75% in the laboratory portion of the course, the student will not pass the course.
- b. **LABORATORY PRACTICAL EXAMS** must be taken on the date and time scheduled.
- c. No retesting will be allowed on **LABORATORY GRADED ASSIGNMENTS OR LABORATORY PRACTICAL EXAMS.**

2. **Unexcused Absence:**

An unexcused absence, i.e., an absence that occurs without notification of the MLT Program faculty, will count as two excused absences.

3. **Excused Absence:**

An excused absence, i.e., an absence that occurs with notification of the MLT Program faculty prior to lecture/laboratory, will count as an excused absence.

Note: an excused absence is still an absence and will count toward the total number of allowable absences per course, per quarter.

Note: if a student is not allowed to participate in a laboratory due to incorrect attire or other safety issues, this will count as an excused absence.

4. **Tardies:**

Students are expected to arrive on time for classes and clinical rotations. A student arriving after class or clinical is scheduled to begin will be considered tardy. Three tardies will be counted as one excused absence.

- Arriving on time for class means being in your seat with necessary materials ready to use by the time class begins (as indicated on your course schedule). Class start/end time is monitored using the clock in the classroom.
- Arriving on time for clinical rotations means being at the site, in the correct department, with your lab coat on, ready to work, by the time the rotation is scheduled to start.

5. **Leaving Class Early:**

If a student leaves class early without permission of the instructor, that student will be considered absent.

F. CLINICAL EDUCATION ROTATIONS:

1. Clinical assignments are determined based on clinical site availability and schedule. Students are asked preference but it is not guaranteed that they will be placed at their sites of choice. The program tries to give students a wide variety of clinical education experiences so for this reason students are placed at various clinical sites.
2. If there are more students for clinical education rotations than clinical sites available, students will be placed or scheduled based on the date of completion of his/her application file to the Program. MLT students not placed in clinicals for Clinical Education II and III (January-June) may have an alternate clinical time after June. Students may be assigned to clinical sites outside of Lincoln.
3. A student may repeat one clinical rotation, should clinical space permit, to obtain a satisfactory evaluation.
4. The student must demonstrate proficiency in written and verbal English as evaluated by the MLT Program faculty, or the student will not be permitted to attend clinical rotations.
5. **Absences from Clinical Rotations:**
 - a. One day of absence at the scheduled clinical site(s) is allowed each quarter during Clinical Education II and III without make-up time required. This is at the discretion of the clinical site instructor(s) and MLT Program faculty.
 - b. The student must notify the MLT Program staff prior to starting time on the day the absence occurs. The clinical site must also be notified prior to starting time when such an absence occurs. If a student leaves a clinical site early, the student must notify the MLT Program faculty. Failure to notify either the clinical site or the MLT Program faculty will cause the absence to be classified as "Unexcused".
 - c. "Unexcused" absences will be required to be made up as double-time.

- d. In the event of inclement weather classes at SCC may be cancelled. When this happens it is not required that a student attend clinical that day. However, the absence protocol must still be followed and the student must call both the clinical site AND the clinical education coordinator at SCC.

6. **Clinical Education Special Requirements:**

- a. A completed health statement will be required of each student prior to taking MEDT1101. Failure to complete the health statement by the required time may result in disciplinary action up-to and including dismissal from the Medical Laboratory Technology Program.
- b. A criminal background check (CBC) is required of each student (2nd - quarter). Based on the outcome of the background check, a student may be prevented from taking certain courses, accessing certain laboratory experiences, or completing the program. A non-refundable fee of \$45 will be assessed for this CBC (required second quarter.) Please note: Misdemeanor or felony convictions may prevent a graduate from acquiring a state license.
- c. Students admitted to a Health Sciences program at Southeast Community College requiring a clinical rotation at a contracted healthcare facility will be required to submit to initial drug and alcohol testing prior to the first clinical rotation. (Prior to Clinical Education I)
- d. Students may be requested by clinical affiliates to submit to fingerprinting
- e. A two-step skin test for tuberculosis and/or a chest X-ray are required. (Prior to Clinical Education I.)
- f. Flu immunization is required when available in the Fall quarter (6th – quarter, prior to Clinical Education I.) The student may sign a waiver, if applicable. If a student declines the influenza vaccine, he/she will be required to wear a mask at all times while at a clinical site. The student is responsible for all costs associated with these clinical requirements.
- g. A current American Heart Association's Basic CPR and First Aid or a Red Cross Provider CPR card is required. (Prior to Clinical Education I). It is the responsibility of the student to cover the cost for the CPR course.
- h. Students are responsible for their own transportation and will rotate between rural and metropolitan hospitals, various clinics and reference laboratories.
- i. Students are required to purchase scrub tops/pants for clinical rotations. Colors are selected by MLT Program faculty. A special fee is attached to MEDT2690 Clinical Education I for scrub tops/pants and long-sleeved white t-shirts.

7. **Protected Health Information (PHI):**

In order to comply with the American Recovery and Reinvestment Act of 2009 which includes Health Information Technology for Economic and Clinical Health Act (HITECH), Health Sciences students enrolled in Southeast Community College (SCC) Health Sciences Division **will not remove** any protected health information (PHI) from any clinical facility. Nor will students transmit any PHI electronically except when doing so in the usual performance of caring for patients or clients and full knowledge of the clinical preceptor or instructor. This bill established new requirements for business associates (SCC) and covered entities (Facility) with respect to handling protected health information. SCC must report any breach of confidentiality to the facility and the facility and SCC may be subject to

fines. The student will be removed from the clinical facility and may be dismissed from the MLT Program if confidentiality is not maintained.

To better comply with HIPAA and maintain confidentiality, students are not permitted use cell phones or to wear smartwatches or smart devices while at clinical sites.

H. RELEASE OF FINAL GRADES:

1. Final grades will not be posted until all MEDT final written exams and laboratory practical exams are completed.
2. The MLT Program faculty does not release grades over the telephone or via e-mail.
3. Due to the technical natures of both the final written exam and the final laboratory practical exam, calculation of the grades obtained on these exams require time beyond the end of the quarter. Calculation of the final course grade also requires time beyond the end of the quarter. Therefore, final grades may not be given before the end of the quarter.
4. Students wishing to know their grades may access his/her grades on Web-Advisor or Moodle Gradebook via the Hub (<http://thehub.southeast.edu>).

I. EXCEPTIONS TO THESE REQUIREMENTS

Situations not specifically covered by the above program requirements will be evaluated on an individual basis, and any exceptions to these requirements will be at the discretion of the MLT Program faculty.

J. GRIEVANCE PROCEDURES

All students and applicants for admission have the right of due process in filing and resolving grievances concerning abridgement of rights, including, but not limited to, admission, student scholastic progress, financial aid, actions or activities of the College. A grievance shall be defined to mean an allegation or non-application of college rules or policy. Grievances may be processed on either an informal or formal basis. Students are encouraged to seek resolution of the grievance at the lowest level possible.

Specific procedures for resolving grievances are outlined in the SCC Student Handbook. Students should refer to the appropriate sections in the *SCC Handbook* when and if they wish to process a grievance.

Medical Laboratory Technology Laboratory Safety Information

A. GENERAL SAFETY AND DRESS CODE GUIDELINES FOR THE MLT LABORATORY

1. **Absolutely NO cell phones are to be in rooms B-34 and B-35.** Both rooms are considered contaminated as biohazard specimens are handled in each.
2. **You MUST wash your hands before leaving room B-34 and B-35.** Both rooms are considered contaminated as biohazard specimens are handled in each.
3. **No food or drinks (including bottled water) or food in classrooms B-34 and B-35.** Both rooms are considered contaminated as biohazard specimens are handled in each.
4. Clothing that covers the lower body, including the ankles and tops of the feet, must be worn in student laboratories at all times. No shorts or capris are to be worn in student laboratories. If wearing a skirt, hosiery must be worn. **Students will not be allowed to participate in the laboratory portion of the class unless dress code requirements are met.** Failure to participate because dress code requirements were not met will reduce the laboratory portion of the class grade.
5. No open-toe or open-heel shoes or sandals are permitted in MLT Program student laboratories. Shoes that cover the entire foot must be worn in all medical laboratories, according to CLSI (Clinical Laboratory and Standards Institute) and OSHA guidelines.
6. No caps or sunglasses may be worn in student laboratories, for safety and professional reasons
7. Hair greater than shoulder length must be pulled back and bound during student laboratories.
8. No gum chewing, food, or application of lip balm/gloss in student laboratories.
9. You must purchase a disposable laboratory coat (no cloth lab coats permitted) and latex-free, vinyl-free, and powder-free disposable gloves prior to the class when venipunctures or capillary punctures are performed. Both are available from the SCC Bookstore. Laboratory coats are to remain in room B-34 and B-35 and must be discarded in the biohazard waste at the end of the quarter.
10. Keeping students safe is the number one priority of the instructors of the Procedures in Phlebotomy course. If a student is determined to be unsafe by an instructor that student will be put on a 'Performance Improvement Plan'. While on the Performance Improvement Plan the student will not be allowed to perform any procedures on other students. He/she will practice and perform procedures on the (fake) practice arms until the instructor determines the student can return to drawing on other students. Due to the importance of safety in the laboratory, students will not receive any laboratory points while on a Performance Improvement Plan. This will affect the final grade of the student and may prevent him/her from being successful in the course. Students who are on a Performance Improvement Plan going into the final practical draw will not be allowed to complete the draw and will therefore not receive a passing grade for the course.
11. Students will be respectful to other students and the instructor during all class discussions.
12. No swearing, discriminatory comments, or other inappropriate language will be tolerated.

13. Avoid direct **contact** of **biological specimens** with skin and clothes. All persons processing blood and body-fluid specimens must wear gloves. Bio-wipes must be used when removing caps or tops from tubes. Masks and protective eyewear and/or plastic shields should be worn if splashing of blood or body fluids is anticipated. Gloves should be changed and hands washed after specimen processing. Disposable gloves are not to be reused.
14. Laboratory work surfaces should be decontaminated within appropriate chemical germicide after a spill of blood or other body fluids and when work activities are completed. A 10% phenol solution or a 10% (1:10 dilution) bleach solution are effective disinfectants.

B. STUDENT PROTOCOL FOR OCCUPATIONAL EXPOSURES

1. **All** occupational exposures must be reported **immediately** to the supervising clinical or SCC faculty, and the Medical Laboratory Technology Program Chair at (402) 437-2760 or call HSD Administrative Assistant to locate Program Chair at (402) 437-2726/2725.
2. **Occupational Exposures:**
 - a. Contaminated needle-stick
 - b. Puncture wound from blood-contaminated sharp instrument or object
 - c. Contamination of any obviously open wound, non-intact skin, or the mucus membranes by blood or body fluids.
 - d. Respiratory or gastrointestinal exposures to bacteria or fungi.
3. **Exposure to the patient's blood or saliva on the unbroken skin is not considered significant.**
4. **Post Exposure Incident Follow-Up:**
 - a. Flush affected area with water for 15 minutes.
 - b. Immediately report all eye, mouth, other mucus membrane, non-intact skin, or parenteral (sharp puncture) contact with blood or other potentially infectious materials to supervising clinical or SCC faculty, and Program Chair (402-437-2760).
 - c. Seek medical help immediately. Student should immediately call own physician and request appointment as soon as possible. For post exposure prophylaxis to be effective, it should be administered as soon as possible, preferably within two (2) hours, following an exposure to HIV infected blood.
 - d. Comply with treatment and diagnosis schedule as determined by your healthcare professional. Any lab tests required by the attending physician (anti-HIV, HbsAg and anti-HBs) will be student's responsibility. If the student tests positive for Hepatitis B and/or HIV, he/she will be referred to community resources for follow-up.
 - e. Student should return for HIV results from primary physician in approximately two and one-half weeks.
 - f. It is encouraged to take appropriate precautions with sexual activity (abstain or use condoms) and refrain from donating blood.
 - g. Student should seek medical evaluation for any unusual problems, such as fatigue, fever, swollen glands, or a rash and be monitored for severe side effects from post exposure prophylaxis, i.e., Retrovir or similar drug.
 - h. Complete the *Incident Report Form* for the clinical site and fill out a report using the TIPS system, located on 'The Hub' for SCC.
 - i. All costs will be the responsibility of the student.

C. ACCIDENTS

Reporting—Report it to your instructor at that specific laboratory period. Any cut or open wound should be thoroughly covered prior to working in the laboratory

Recording—An incident report form must be completed and signed by the instructor

Prevention—Be cautious and slow down. Think before you do something or ask if hesitant

In some cases of serious laboratory accidents, such as burns, medical assistance should be summoned while first aid is being administered. For general accidents, competent medical help should be sought as soon as possible after the first aid treatment has been completed. In some cases of chemical burns, especially where the eyes are involved, speed in treatment is most essential.

Medical Laboratory Technology Additional Laboratory Safety Information

A. CAMPUS EMERGENCY PROCEDURES

Classroom Emergency Procedures are posted in all classrooms

Classroom Maps are posted in the classroom and note the nearest building exit should an emergency occur

Safety Management Instructions and Supplies are located by emergency telephones

Emergency Classroom and Hallway Telephones include wall phones located near the entrance of classrooms and labs at the Lincoln Campus for the safety and convenience of students, faculty, staff and visitors

Each classroom at all SCC Lincoln locations is equipped with a Toshiba 3210-S digital speaker phone with “one-touch” buttons programmed for the following call types:

- **Emergency 911**
- **Switchboard (Administrative Office @ ESQ)**
- **Maintenance**
- **Computer Help Desk**

How They Work: Press the “one touch” button to connect directly to 911, Switchboard, Maintenance, or the Computer Help Desk.

All classroom and hallway phones have been programmed to block both local and long distance outbound calls. The hallway phones function the same way as the classroom phones as described above.

Additional Functionality: The classroom and hallway phones are able to dial all of the 4-digit extensions that are listed in the SCC Phone Directory.

B. HAZARDS IN THE LABORATORY

Biological Hazards

In the health care setting, there is a risk of exposure to infectious diseases. All exposures to body substances from any individual should be considered potentially dangerous and appropriate precautions taken.

1. The following are the guidelines for Standard Precautions from the Centers for Disease Control:
 - a. All health-care workers should routinely use appropriate barrier precaution to prevent skin and mucous membrane exposure when contact with blood or other body fluids of any patient is anticipated. Gloves should be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients, for handling items or surfaces soiled with blood or body fluids, and for performing venipuncture and other vascular access procedures. Gloves should be changed after contact with each patient. Masks and protective eyewear or face shields should be worn during procedures that are likely to generate splashes of blood or other body fluids.
 - b. Hand and other skin surfaces should be washed immediately and thoroughly if contaminated with blood or other body fluids. Hands should be washed immediately after gloves are removed. Disposable gloves are not to be reused.

- c. All health-care workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures. To prevent needle stick injuries, needles should not be recapped, purposely bent or broken by hand, removed from disposable syringes, or otherwise manipulated by hand. After they are used, disposable needles and syringes, scalpel blades, and other sharp items should be placed in puncture-resistant containers for disposal. The puncture-resistant containers should be located as close as is practical to the use area.
 - d. Although saliva has not been implicated in HIV transmission, to minimize the need for emergency mouth-to-mouth resuscitation, mouthpieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.
 - e. Health-care workers who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling patient care equipment until the condition resolves.
 - f. Pregnant health-care workers are not known to be at greater risk of contracting HIV infection than health-care workers who are not pregnant; however, if a health-care worker develops HIV infection during pregnancy, the infant is at risk of infection resulting from perinatal transmission. Because of this risk, pregnant health-care workers should be especially familiar with and strictly adhere to precautions to minimize the risk of HIV transmission.
2. All specimens of blood and body fluids should be put in a well-constructed container with a secure lid to prevent leaking during transport. Care should be taken when collecting each specimen to avoid contaminating the outside of the container and the laboratory form accompanying the specimen.
 3. For routine procedures, such as histologic and pathologic studies or microbiologic culturing, a biological safety cabinet is not necessary. However, biological safety cabinets (Class I or II) should be used whenever procedures are conducted that have a high potential for generating droplets or aerosols. These include activities such as blending, sonicating, and vigorous mixing.
 4. Contaminated materials used in laboratory tests should be decontaminated before reprocessing or be placed in bags and disposed of in accordance with institutional policies for disposal of infective waste.
 1. **Decontamination** - Disposable glassware is used for pathogenic microbial culture and then disposed of. Nonpathogens in glassware, that is not disposable, requires a 10% bleach wash prior to disinfection in the dry air oven. Benches—wipe down with a 10% (1:10 dilution) bleach solution at the start and finish of each laboratory period. Dropped or spilled culture—saturate the area with 10% (1:10 dilution) bleach solution. Allow bleach to disinfect the area; wipe up the area with paper towels.
 2. **Disposal** - Contaminated items should be placed in special, labeled containers.
 3. **Handling of Specimens and Cultures** - Cultures should never be taken from the laboratory without the permission of the instructor. Handle all specimens and cultures as being highly infective
 4. **Sterilizing Inoculating Loops and Needles**—They are sterilized by heating the entire length of the wire to redness before and after using. Do not cool loop by waving in the air or touching it to an agar surface because it will cause a microbial aerosol. Cool inoculating needles by holding them still in the air for 10 to 15 seconds. Do not touch the tops of bacti-incinerators while they are on.

5. **Microbiology Plates**—Keep air currents to a minimum. Doors and windows should be kept
6. closed when transferring cultures and pouring agar plates because bacteria travel with air currents and can easily enter petri dishes and test tubes. Moulds (molds) must be examined in the safety hood to avoid exposure to spores.
7. **Cuts**—Do not work with uncovered cuts or broken skin on the hands. Apply bandages and wear gloves.
8. **Never recap used needles using either hands or** any other technique that involves directing the point of needle toward any part of the body; rather, use either a one-handed "scoop" technique or a mechanical device designed for holding the needle sheath.
9. Scientific equipment that has been contaminated with blood or other body fluids should be decontaminated and cleaned before being repaired in the laboratory or transported to the manufacturer.
10. **Hand washing**—Wash hands thoroughly wash with an antiseptic soap after handling biological specimens, especially before eating, drinking, or smoking.
11. All persons should wash their hands after completing laboratory activities and should remove protective clothing before leaving the laboratory. Additionally an alcohol based antiseptic may be used after washing the hands with soap.
12. **DO NOT** place any personal articles on working surfaces. All personal articles should be kept off lab counters or in areas away from biological hazard materials.

Chemical Hazards

Precautions: The following precautions should be followed to avoid or minimize the chemical hazard in the clinical laboratory:

- a. Never grasp bottles of acid, caustic materials, or any other reagents by the neck; instead, hold them firmly around the body with both hands. Bottle carriers should be used to carry bottles of acids or caustic material.
- b. Use laboratory fume hoods to confine and exhaust odoriferous, corrosive, and toxic fumes generated in the laboratory.
- c. Protective eye glasses or goggles **MUST** be worn when working with acids and caustic, explosive, and hot molten materials. Protective eyewear must have the manufacturer's trademark and a Z87 logo on the frame, as required under Nebraska State Law #999.
- d. When diluting acids, always add acid slowly to water while mixing. **Water should never be added to concentrated acids** because it will rapidly generate heat that can break the container and cause spattering which may burn skin and eyes.
- e. When making acid or alkaline reagents in large quantities, perform all mixing in a sink. The sink provides water for cooling and confines the reagents in the event of flask or bottle breakage.
- f. When pouring reagents into a drain, use large amounts of water to flush the reagent.
- g. Do not pour two or more different reagents one after another, but rather flush a large quantity of water between them, particularly if pouring acid reagents followed by cyanide which generates toxic hydrogen cyanide fumes.

- h. Never pour ether and any other petroleum solvents into a sink. Waste liquid should be collected in a safety can and properly disposed of in a safe area by a disposal specialist.
- i. Flush solutions containing sodium azide **only** with copious amounts of water. Sodium azide forms an accumulation of lead and/or copper azide which is explosive. The Center for Disease Control has suggested a procedure to prevent explosive azides accumulation in plumbing by allowing one to two liters of 10 percent sodium hydroxide solution to remain in the trap for a minimum of 16 hours and then flushing the drain with water for a minimum of 15 minutes.
- j. Dispense strong acids, caustic materials, and strong oxidizing agents by automatic pipetting devices. **NEVER** pipette them by mouth.
- k. Label all reagents and other chemicals properly with their contents, date of preparation, expiration date if applicable, and the initials of the person preparing the reagent or chemical. If the reagent is toxic, it should be clearly marked on the label.
- l. Keep open flames and hot plates away from flammable solvents.
- m. Use specific absorbents in confining the spillage of acid-caustic material.
- n. **Safety Data Sheet (SDS)** is available for each hazardous agent in the student laboratory. The **Safety Data Sheets** are located in the MSDS binder in Room B35 or available on-line.

Corrosive (Caustic) Chemicals

Substances that by direct contact will injure skin and eyes, and when swallowed or inhaled, will cause severe damage to the tissues of the respiratory and alimentary tracts. Corrosives are classified as liquids, solids, or gases.

Liquids are the most corrosive chemicals involved in accidents of external injuries

- | | |
|---------------------------|---------------------------|
| a. Acetic Acid | b. Carbolic Acid (Phenol) |
| c. Cresylic Acid (Cresol) | d. Formalic Acid |
| e. Hydrochloric Acid | f. Nitric Acid |
| g. Oxalic Acid | h. Perchloric Acid |
| i. Phosphoric Acid | j. Picric Acid |
| k. Sulfuric Acid | l. Trichloroacetic Acid |

Solids are the least hazardous

- a. Alkali Metals (Na, K, Li)
- b. Transition Elements (I, Fe, Hg)
- c. Alkali Earth Metals (Ca, Mg, Ba)
- d. Compounds:
 - Disulfides
 - Carbonates
 - Cyanates
 - Dichromates
 - Ferricyanates
 - Hydroxides
 - Oxides
 - Permanganates

Gases are easily absorbed into the skin

- | | |
|---------------------------|--------------------------|
| a. Ammonia | b. Acetic Acid |
| c. Carbolic Acid | d. Formaldehyde |
| e. Hydrochloric Acid | f. Nitric Acid |
| g. Fuming Sulfuric Acid | h. Asphyxiant |
| i. Aliphatic Hydrocarbons | j. Aromatic Hydrocarbons |

k. Halogenated Hydrocarbons

l. Inorganic and organometallic gases

m. Alcohols, Ethers

- Ethers are not toxic but can cause problems
- They form peroxides which can be explosive, vapors are given off and can be ignited by a flame. Store in safety as little as possible, minimizing length of time for peroxides to build up

Storage: Corrosives should be stored in dry, well-ventilated areas away from sunlight. They should be stored by themselves if possible, or at least away from flammables, toxic substances, oxidizers, and compressed gases. They should be stored separately by their classifications on low shelves.

Spills: Spills should be decontaminated right away. Neutralizers should be available.

Disposal: Disposal of corrosives first should be neutralized before disposal by landfill.

Carcinogens

Carcinogens are any type of agent which can be cancerous, and label as such.

Carcinogens

- | | |
|--|------------------------------|
| a. 2-Acetylaminofluorene | b. 4-Aminodiphenyl |
| c. Benzidine | d. 3, 3'-Dichlorobenzidine |
| e. Dimethylaminoazobenzene | f. Alpha-Naphthlamine |
| g. Beta-Naphthlamine | h. 4-Nitrobiphenyl |
| i. N-Nitrosodimethylamine | j. Beta-Propiolactone |
| k. Bis-Chloromethyl Ether | l. Methyl Chloromethyl Ether |
| m. 4, 4'-Methylene (Bis) 2-Chloroaniline | n. Ethylenine |

Potential Carcinogenic, Toxic, Teratogenic

- | | |
|-----------------------|--------------------------|
| a. O-Toluidine | b. Selenium |
| c. Isoniazid | d. Aflatoxin |
| e. Carbamate Compound | f. Diazodyes (Congo Red) |
| g. Triton | h. Sodium Arsenate |
| i. Lead | j. Phthalic Acid Esters |

Flammables:

- Flashpoint is the lowest temperature at which a liquid gives off enough vapors to form an ignitable mixture with air near the surface of the liquid. Flammables have flashpoints below 100° F. and combustibles have flash-points above 100° F.
- Ignitable temperature is the lowest temperature needed to cause a self-contained combustion
- Flammable liquids with flashpoint and ignition temperature in Fahrenheit. *See Table.*

		<u>Flashpoint</u>	<u>Ignition Temp</u>
<u>Hydrocarbons</u>			
	Toluene	40	896
	Isopentaine	< -60	788
	Xylene	81	986
	Petroleum Ether	0	550
<u>Alcohols</u>			
	Methanol	52	725
	Ethanol	55	689
	2-Propanol	53	750
	Tertiary Butyl Alcohol	52	896

	Glycerol	320	698
<u>Ketones</u>			
	Acetone	0	869
	Methyl Isobutyl Ketone	73	860
<u>Esthers</u>			
	Ethyl Acetate	34	800
	Amyl Acetate	77	680
	Isoamyl Acetate	77	680
<u>Glycols</u>			
	Ethylene Glycol	232	752
	Propylene Glycol	210	700
	Dioxane	54	356
<u>Chloro-Compounds</u>			
	1-2, Dichlorethane	56	775
	Esther	49	320
<u>Amines</u>			
	Diethylamine	0	594
<u>Cyclohexanes</u>			
	Cyclohexanol	154	572
	Cyclohexanone	111	788
<u>Aldehydes</u>			
	Acetaldehyde	-36	347

- d. Store in approved storage containers in well ventilated, cool, free of ignition sources and isolated from other chemicals. Do not store in basements. Special containers of self-closing lids should be provided for volatile chemicals. They should have grooved stoppers to release built up pressure. Ether, Esthers, and Acetone quantities kept on hand should be no greater than are necessary for current work.
- e. Spills. Mop area and use rags to absorb the spill, place in closed containers, and allow to evaporate outside or in exhaust hood.

Electrical and Mechanical Hazards

- a. Properly ground all equipment and check it at least every 6 months for adequate grounding.
- b. Replace any worn wire immediately. Do not touch electrical equipment and connections with wet hands.
- c. Take precautions to avoid spilling reagents on electrical equipment. If spillage occurs, the instrument must be turned off immediately and dried thoroughly.
- d. Unplug and mark all wet or malfunctioning instruments and caution co-workers about the kind of hazard.
- e. Before opening equipment for troubleshooting or maintenance purposes, be sure it is unplugged.
- f. Disconnect electrical switches on all power-driven machines or motors before beginning any repair work to ensure that the instrument cannot be set in motion accidentally.
- g. Replace blown fuses by the same type and size of fuse. If the fuses on an instrument blow frequently and investigate the possibility of a short circuit or overload.
- h. Never insert fuses in a live circuit.
- i. Keep hands and clothing articles away from moving parts of an instrument.
- j. Aisle and corridor clearance should be open for fire or emergency exit.
- k. An unbalanced load in a centrifuge may cause the instrument to vibrate.
- l. Never exceed the maximum speed rating for the centrifuge head.

FIRE PREVENTION AND CONTROL

Fire Hazards: Fires can be divided into four designated classes-- A, B, C, and D. People working in the lab should be knowledgeable about different kinds of fire and the kinds of fire extinguishers to be used.

- Class A Fire** This is a fire of ordinary combustibles; for example, paper, cloth, wood, trash, etc. This kind of fire may be put out by water or a Chemical A fire extinguisher.
- Class B Fire** This is a fire of flammable liquids; for example, gasoline or organic solvents. A flammable liquid fire can be put out by a dry-chemical, foam, or carbon dioxide fire extinguisher. Never use water for such fires.
- Class C Fire** This is an electrical fire; for example, motor, wiring, etc. Only dry-chemical or CO₂ type fire extinguishers should be used. Water should never be used for this type of fire.
- Class D Fire** This is a fire of combustible metals, certain chips, shavings, turning, etc. This kind of fire may be extinguished by the dry-powder-type extinguisher, sand, or NaCl.

Every lab should be fully equipped with firefighting equipment that includes appropriate types of fire extinguishers, fire blanket, and safety shower. Fire equipment should be checked and tested at regularly scheduled intervals. Every lab should have a systematic procedure to be followed in case of fire, and all laboratory personnel should know this procedure. This is posted in each SCC classroom and laboratory.

Location of Fire Extinguisher—East wall between storage cabinet and door in laboratory in B35

Fire Evacuation Plan—Posted in laboratory

Eye Wash—Located left of sink in southeast corner of the laboratory in and in the classroom B34 attached to the small sink on the west wall

Fire Blanket Location—East wall between storage cabinet and door

Spill Clean-Up Kit—On cupboards in southwest corner of the laboratory in B35

First Aid Kit—On cupboards in southwest corner of laboratory in B35

Safety Shower—Located right of sink along north wall in laboratory in B35

Basic First Aid Procedures for Some Burns:

Alkali or acid burns on the skin or in the mouth: Rinse thoroughly with large amounts of running tap water. If the burns are serious, consult a physician.

Alkali or acid burns in the eye: Wash out with running water thoroughly for a minimum of 15 minutes. Help the victim by holding the eyelid open so that the water can make contact with the eye. An eye wash is recommended for this purpose, but any running water will suffice. A physician should be notified immediately, while the eye is being washed.

Heat Burns: Apply cold running water as soon as possible. If it is a third-degree burn (the skin is burned off), consult a physician immediately, and do not apply any grease or paste.