



# Medical Laboratory Technology Program

Student Handbook

Sandhills Community College  
2024-2025 Academic Year

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## MLT PROGRAM MISSION STATEMENT

The MLT Program provides sufficient didactic material and laboratory practice to students so they can reasonably expect to meet the career entry skills for a MLT and to pass the national certification examinations. The MLT Program graduate earns an Associate of Applied Science (AAS) who has achieved the professional attitudes and laboratory skills and require only the usual routine new employee orientation to become an asset to their place of employment.

## MLT PROGRAM GOAL

The goal of the MLT Program at Sandhills Community College is to provide students with a course of study which incorporates theoretical knowledge of sufficient depth and breadth, provides opportunity for technical skill development, and emphasizes the interpersonal and the ethical behaviors expected of clinical laboratorians.

The education experiences:

- A. Will prepare the student to graduate with an Associate in Applied Science (AAS) degree,
- B. Provide sufficient learning experiences for students to acquire the competencies required for entry level position in a medical laboratory,
- C. Provide students with quality education to pass certification examinations,
- D. Meet the needs of local employers,
- E. Provide an educational background such that graduates will pursue further education, both informal and formal.

## GENERAL STUDENT COMPETENCIES IN THE MLT PROGRAM

The graduate of the MLT Program will:

1. Be able to perform routine clinical laboratory tests (hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, urinalysis, and phlebotomy) as the primary analyst.
2. Be able to make specimen-oriented decisions based on predetermined criteria, including a working knowledge of critical values.
3. Will be able to work independently and collaboratively, being responsible for own actions.
4. Have an understanding of laboratory analysis ranging from waived and point of care testing to complex testing encompassing all the major areas of the clinical laboratory and be able to function at all phases of the analytic process, which includes the pre-analytic, analytic, and post-analytic phases.
5. Have requisite knowledge and skills to educate or train other laboratory professionals, health care professionals, and others in laboratory practice as well as the general public.
6. Be able to relate to people and have sufficient communication skills allowing for frequent interactions with members of healthcare team, coworkers, the public, patients and their families. Communications are verbal, written, and electronic, as in laboratory information systems.
7. Understand the regulatory agencies impacting health care and the laboratory.
8. Monitor quality control and participate in quality assurance programs.

9. Demonstrate commitment to the patient and professional by displaying ethical and moral attitudes required for interacting with patient, professional associates, and the community.
10. Have the capacity for calm and reasoned judgment

## DESCRIPTION OF THE TECHNICIAN LEVEL AS DEFINED BY THE ASCP BOC (AMERICAN SOCIETY FOR CLINICAL PATHOLOGY BOARD OF CERTIFICATION)

### Knowledge

The technician has a working comprehension of the technical and procedural aspects of laboratory tests. The technician maintains awareness and complies with regulatory requirements, safety regulations, and ethical standards of practice. The technician correlates laboratory test to disease processes and understands basic physiology recognizing appropriate test selection and abnormal test results.

### Technical Skills

Follows established procedures for collecting and processing biological specimens for analysis.

Performs chemical, microbiologic, immunologic, hematologic, and immunohematologic laboratory procedures that require limited independent judgment.

The technician comprehends and follows procedural guidelines to perform laboratory tests to include

- specimen collection and processing
- instrument operation and troubleshooting
- result reporting and record documentation
- quality control monitoring
- computer applications
- safety requirement

### Problem Solving and Decision Making

- Recognizes unexpected results and instrument malfunction and takes appropriate action.
- The technician recognizes the existence of procedural and technical problems and takes corrective action according to predetermined criteria or refers the problem to the appropriate supervisor.
- The technician prioritizes test requests to maintain standard patient care and maximal efficiency.

### Communication

- Provides laboratory information to authorized sources
- The technician communicates specimen requirements, reference ranges, and test results, and prepares drafts of procedures for laboratory tests according to a standard format.

### Teaching and Training Responsibilities

- Demonstrates laboratory technical skills to other laboratory personnel.

## MEDICAL LABORATORY TECHNICIAN – COMPETENCIES

For the laboratory areas of Body Fluids, Blood Bank, Chemistry, Hematology, Immunology and Microbiology, and in accordance with established procedures, the following competencies are tested.

### A. APPLIES KNOWLEDGE OF

1. Theory and principles related to:
  - i. Anatomy (Body Fluids)
  - ii. Biochemistry (Chemistry and Hematology)
  - iii. Growth characteristics/diagnostic and infective forms (Microbiology)
  - iv. Immunology (Blood Bank and Immunology)
  - v. Physiology (Body Fluids, Chemistry, Hematology, Immunology)
  - vi. Laboratory information systems

### B. SELECTS APPROPRIATE

1. Controls for test performed
2. Course of action
3. Instruments to perform requested test
4. Quality control procedures
5. Reagents/media/blood products
6. Routine/special procedures to verify test results
7. Type of sample and method for test required

### C. PREPARES/PROCESSES

1. Controls
2. Equipment and instruments
3. Reagents/media/blood products
4. Specimens

### D. CALCULATES RESULTS

### E. ASSESSES TEST RESULTS BY CORRELATING LABORATORY DATA WITH

1. Clinical or other laboratory data
2. Physiologic processes to validate test results and procedures
3. Quality control data
4. Results obtained by alternate methodologies

### F. EVALUATES

1. Appropriate actions and methods
2. Corrective actions
3. Patient-related requirements
4. Possible sources of error or inconsistencies
5. Quality control procedures
6. Specimen-related requirements

### G. EVALUATES LABORATORY DATA TO

1. Assure personnel safety

2. Check for common procedural/technical problems
3. Recognize and report abnormal test results and/or the need for additional testing
4. Recognize possible inconsistent results/sources of error
5. Recognize related disease states
6. Take corrective action according to predetermined criteria
7. Verify test results for reporting

## MEDICAL LABORATORY TECHNICIAN MLT (ASCP) EXAMINATION CONTENT GUIDELINES

### The Examination Model

The Board of Certification criterion-referenced examination model consists of three interrelated components:

1. **COMPTECY STATEMENTS** – describe the skills and tasks that Medical Laboratory Technicians should be able to perform.
2. **CONTENT OUTLINE** – delineates general categories or subtest areas of the examination.
3. **TAXONOMY** – levels describe the cognitive skills required to answer the question.

Level 1 – Recall: Ability to recall or recognize previously learned (memorized) knowledge ranging from specific facts to complete theories.

Level 2 – Interpretive Skills: Ability to utilize recalled knowledge to interpret or apply verbal, numeric or visual data.

Level 3 – Problem Solving: Ability to utilize recalled knowledge and the interpretation/application of distinct criteria to resolve a problem or situation and/or make an appropriate decision.

### Examination Reporting Mechanisms

After the examination administration, preliminary test results (pass or fail) will appear on the computer screen. An official examination performance report will be mailed to the examinee within 10 business days of the examination administration, provided all official documents have been received.

The examinee Performance Report provides the scaled score on the total examination and pass/fail status for all candidates. In addition, failing candidates receive scaled scores for each subtest (see content outline for subtests). This information may help the examinee identify areas of strengths and weaknesses in order to develop a study plan for future examinations. A total scaled score of 400 is required to pass the examination.

<b>SUBTEST</b>	<b>MLT</b>
Blood Bank (BBNK)	15-20%
Chemistry (CHEM)	20-25%
Hematology (HEMA)	20-25%
Immunology (IMMU)	5-10%
Laboratory Operations (LO)	5-10%
Microbiology (MICR)	15-20%
Urinalysis and Other Body Fluids (UA)	5-10%

## Content Outline

Blood Bank (15-20% of Total Exam)

- I. BLOOD PRODUCTS
  - A. Donors
    - 1. Qualification
    - 2. Collection methods
    - 3. Adverse reactions
    - 4. Special donations (e.g. autologous)
  - B. Processing
    - 1. Testing
    - 2. Labeling
  - C. Storage
    - 1. Anticoagulants
    - 2. Temperature requirements
    - 3. Transportation
    - 4. Properties of stored products
    - 5. Expiration
  - D. Blood Components
    - 1. Red blood cells
    - 2. Cryoprecipitated AHF
    - 3. Platelets
    - 4. Plasma
    - 5. Granulocytes
    - 6. Leukocyte-reduced components
    - 7. Frozen/deglycerolized red blood cells
    - 8. Apheresis products
    - 9. Fractionated products
    - 10. Whole Blood
    - 11. Washed red blood cells
    - 12. Irradiated components
  - E. Blood Component Quality Control
- II. BLOOD GROUP SYSTEMS
  - A. Genetics
    - 1. Basic
    - 2. Molecular
    - 3. Inheritance of blood groups
  - B. Biochemistry/Antigens
    - 1. ABO
    - 2. Lewis
    - 3. Rh
    - 4. MNS
    - 5. P1PK/Globoside(P)
    - 6. li
    - 7. Kell
    - 8. Kidd
    - 9. Duffy
    - 10. Lutheran
    - 11. Antigens of high prevalence
    - 12. Antigen of low prevalence
    - 13. Platelet-specific
  - C. Role of Blood Groups in Transfusion
    - 1. Immunogenicity
    - 2. Antigen prevalence
- III. BLOOD GROUP IMMUNITY
  - A. Immune Response
    - 1. Primary and secondary response
    - 2. B and T cells, macrophages
    - 3. Genetics
  - B. Immunoglobulins
    - 1. Classes and subclasses
    - 2. Structure
    - 3. Biologic and physical properties
  - C. Antigen-Antibody Interactions
    - 1. Principles
    - 2. Testing
      - a. Principles
      - b. Methods
  - D. Complement
    - 1. Classical and alternative pathway mechanisms
    - 2. Biological properties
- IV. PHYSIOLOGY AND PATHOPHYSIOLOGY
  - A. Physiology of Blood
    - 1. Circulation and blood volume
    - 2. Composition and function of blood
      - a. Normal function
      - b. Abnormal physiology
    - 3. Cell survival
    - 4. Cell metabolism
  - B. Hemostasis and Coagulation
    - 1. Coagulation factors and disorders
    - 2. Platelet functions and disorders
  - C. Hemolytic Disease of the Fetus and Newborn
    - 1. Pathophysiology
    - 2. Detection
    - 3. Treatment
    - 4. Prevention

- D. Anemias
    - 1. Congenital and acquired
      - a. Pathophysiology
      - b. Detection
      - c. Treatment
    - 2. Immune hemolytic anemias: warm, cold, drug-induced
      - a. Pathophysiology
      - b. Detection
      - c. Treatment
  - E. Transplantation
    - 1. Solid organ
    - 2. Hematopoietic progenitor cell (HPC)
  - V. SEROLOGIC AND MOLECULAR TESTING
    - A. Routine Tests
      - 1. Blood grouping tests
      - 2. Compatibility tests
        - a. Antibody detection
        - b. Crossmatch
      - 3. Antibody identification/clinical significance
      - 4. Direct antiglobulin testing
    - B. Reagents
      - 1. Antiglobulin sera
      - 2. Blood grouping sera
      - 3. Reagent red cells
    - C. Application of Special Tests and Reagents
      - 1. Enzymes
      - 2. Enhancement media
      - 3. Lectins
      - 4. Adsorptions
      - 5. Elutions
      - 6. Titrations
      - 7. Cell suspensions
      - 8. ELISA
      - 9. Molecular techniques
      - 10. Use of thiol reagents
      - 11. Immunofluorescence
      - 12. Solid phase
      - 13. Column agglutination test
      - 14. Chloroquine diphosphate
      - 15. EDTA glycine-acid
    - D. Leukocyte/Platelet Testing
      - 1. Cytotoxicity
      - 2. Platelet testing
  - E. Quality Assurance
    - 1. Blood samples
    - 2. Reagents
    - 3. Test procedures
  - VI. TRANSFUSION PRACTICE
    - A. Indications for Transfusion
    - B. Component Therapy
    - C. Adverse Effects of Transfusion
      - 1. Immunologic reactions
      - 2. Nonimmunologic reactions
      - 3. Transfusion-transmitted diseases
    - D. Apheresis and Extracorporeal Circulation
    - E. Blood Administration and Patient Blood Management
- Urinalysis and Body Fluids (5-10% of total exam)
- I. URINALYSIS
    - A. Physical
      - 1. Color and clarity
      - 2. Specific gravity/osmolality
    - B. Chemical
      - 1. Reagent strip
      - 2. Confirmatory tests
    - C. Microscopic
      - 1. Cells
      - 2. Casts
      - 3. Crystals
      - 4. Microorganisms
      - 5. Contaminants
      - 6. Artifacts
    - D. Renal Physiology
    - E. Disease States
  - II. BODY FLUIDS (e.g. CSF, Amniotic, Synovial, Serous, Semen, Feces)
    - A. Physical
    - B. Chemical
    - C. Microscopic
    - D. Physiology
    - E. Disease states



Chemistry (20-25% of total exam)

I. GENERAL CHEMISTRY

A. Carbohydrates

1. Biochemical theory and physiology
  - a. Metabolic pathways
  - b. Normal and abnormal states
  - c. Physical and chemical properties
2. Test procedures
  - a. Principles
  - b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
  - c. Tolerance testing
  - d. Glycated proteins
3. Test result interpretation
4. Disease state correlation

B. Lipids

1. Biochemistry theory and physiology
  - a. Metabolic pathways
  - b. Normal and abnormal states
  - c. Physical and chemical properties
    - 1) Lipoproteins
    - 2) Phospholipids
    - 3) Triglycerides
    - 4) Cholesterol
    - 5) Apolipoproteins
2. Test procedures
  - a. Principles
  - b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
3. Test result interpretation
4. Disease state correlation

C. Heme Derivatives

1. Biochemical theory and physiology
  - a. Metabolic pathways
  - b. Normal and abnormal states

c. Physical and chemical properties

- 1) Hemoglobin
- 2) Bilirubin
- 3) Urobilinogen
- 4) Myoglobin

2. Test procedures

- a. Principles
- b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances

3. Test result interpretation

4. Disease state correlations

II. PROTEINS AND ENZYMES

A. Enzymes

1. Biochemical theory and physiology
  - a. Metabolic pathways
  - b. Normal and abnormal states
  - c. Physical and chemical properties
    - 1) LD
    - 2) CK
    - 3) AST/ALT
    - 4) GGT
    - 5) Lipase
    - 6) Amylase
    - 7) Alkaline phosphatase
    - 8) Angiotensin converting enzyme

2. Test procedures

- a. Principles
- b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
- c. Test result interpretation
- d. Disease state correlation

B. Protein and Other Nitrogen-Containing Compounds

1. Biochemical theory and physiology
  - a. Metabolic pathways
  - b. Normal and abnormal states
  - c. Physical and chemical properties
    - 1) Proteins

- 2) Amino acids
- 3) Urea
- 4) Uric acid
- 5) Creatinine
- 6) Ammonia
- 7) Tumor markers
- 8) Cardiac markers
- 2. Test procedures
  - a. Principles
  - b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
  - c. Clearances
- 3. Test result interpretation
- 4. Disease state correlation
- III. ACID-BASE, BLOOD GASES AND ELECTROLYTES
  - A. Acid-Base Determinations (Including Blood Gases)
    - 1. Biochemical theory and physiology
      - a. Henderson-Hasselbach equation
      - b. pH and H<sup>+</sup> ion concentration
      - c. CO<sub>2</sub> and O<sub>2</sub> transport
      - d. Normal and abnormal states
    - 2. Test procedures
      - a. Analytical principles
      - b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
    - 3. Test result interpretation
    - 4. Disease state correlation
  - B. Electrolytes
    - 1. Biochemical theory and physiology
      - a. Sodium, potassium chloride, CO<sub>2</sub>, bicarbonate
      - b. Calcium, magnesium, phosphorus, iron, TIBC
      - c. Trace elements
      - d. Normal and abnormal states
- IV. SPECIAL CHEMISTRY
  - A. Endocrinology
    - 1. Biochemical theory and physiology
      - a. Metabolic pathways
        - 1) Normal and abnormal states
        - 2) Mechanism of action
        - 3) Physical and chemical properties
          - i. Steroid hormones (e.g. cortisol, estrogen, hCG)
          - ii. Peptide hormones (e.g. insulin, prolactin)
          - iii. Thyroid hormones
          - iv. Catecholamines
    - 2. Test procedures
      - a. Principles
        - 1) Fluorescence
        - 2) Immunoassay
          - i. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
          - ii. Stimulation/suppression tests
      - 3. Test result interpretation
      - 4. Disease state correlation
  - B. Vitamins and Nutrition
    - 1. Biochemical theory and physiology
      - a. Metabolism and action
      - b. Normal and abnormal states
      - c. Properties

2. Test procedures
  - a. Principles
  - b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
  3. Test result interpretation
  4. Disease state correlation
- C. Therapeutic Drug Monitoring
  1. Pharmacokinetics
    - a. Therapeutic states
    - b. Toxic states
    - c. Metabolism and excretion
  2. Chemical and physical properties
    - a. Aminoglycosides (e.g., gentamicin)
    - b. Cardioactive (e.g., digoxin)
    - c. Anticonvulsants (e.g., phenobarbital)
    - d. Antidepressants (e.g. lithium)
    - e. Immunosuppressants (e.g. tacrolimus)
  3. Test procedures
    - a. Principles
      - 1) Immunoassay
        - i. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
    4. Test result interpretation
    5. Disease state correlation
- D. Toxicology
  1. Toxicokinetics
    - a. Toxic effects, signs and symptoms
    - b. Metabolism and excretion
  2. Chemical and physical properties
    - a. Alcohols
    - b. Heavy metals (e.g. lead)
    - c. Analgesics (e.g. acetaminophen)
    - d. Drugs of abuse

3. Test procedures
  - a. Principles
    - 1) Immunoassay
    - 2) Enzymatic methods
      - i. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
  4. Test result interpretation
  5. Disease state correlation

#### Hematology (20-25% of total exam)

- I. HEMATOLOGY PHYSIOLOGY (to include blood, body fluids, and bone marrow)
  - A. Production
  - B. Destruction
  - C. Function
- II. HEMATOLOGY DISEASE STATES
  - A. Erythrocytes
    1. Anemia
      - a. Microcytic
        - 1) Iron deficiency
        - 2) Thalassemia
        - 3) Sideroblastic
        - 4) Chronic inflammation
      - b. Normocytic
        - 1) Hereditary hemolytic
        - 2) Acquired hemolytic
        - 3) Hypoproliferative
        - 4) Acute hemorrhage
      - c. Macrocytic
        - 1) Megaloblastic
        - 2) Non-megaloblastic
      - d. Hemoglobinopathies
    2. Erythrocytosis
      - a. Relative
      - b. Absolute
  - B. Leukocytes (WHO classification)
    1. Benign leukocyte disorders
      - a. Myeloid
      - b. Lymphoid

- 2. Myeloid neoplasia
    - a. Acute leukemia
    - b. Myelodysplastic syndromes
    - c. Myeloproliferative neoplasms
  - 3. Lymphoid neoplasia
    - a. Acute leukemia
    - b. Chronic leukemia/lymphoma
    - c. Plasma cell dyscrasias
  - 4. Hereditary anomalies
- C. Platelets
- 1. Quantitative abnormalities
    - a. Thrombocytopenia
      - 1) Increased destruction (e.g., ITP, TTP, HIT)
      - 2) Decreased production
      - 3) Pseudothrombocytopenia
    - b. Thrombosis
  - 2. Qualitative defects
    - a. Von Willebrand disease
    - b. Bernard-Soulier syndrome
    - c. Glanzmann thrombasthenia
- III. HEMATOLOGY LABORATORY TESTING
- A. Cell Counts (to include blood and body fluids)
    - 1. Manual
    - 2. Automated
    - 3. Reticulocytes
    - 4. Spurious results
  - B. Differentials and Morphology Evaluation (to include blood and body fluids)
  - C. Hemoglobin
    - 1. Quantitative
    - 2. Qualitative
      - a. Electrophoresis
      - b. Sickle solubility
  - D. Hematocrit
  - E. Indices
  - F. Hemolytic Indicators (e.g., haptoglobin, LD)
  - G. Special Stains
    - 1. Esterase
    - 2. Myeloperoxidase
    - 3. Prussian blue
    - 4. Kleihauer-Betke
  - H. Other Studies
    - 1. ESR
    - 2. G-6-PD
    - 3. Heinz body
  - I. Flow Cytometry Immunophenotyping
    - 1. Leukemia
    - 2. Lymphoma
    - 3. Lymphocyte subsets
    - 4. PNH
  - J. Molecular and Cytogenetic Testing
    - 1. Recurring cytogenetic abnormalities (WHO classification)
    - 2. BCR/ABL1
    - 3. JAK2
- IV. HEMOSTASIS
- A. Physiology
    - 1. Coagulation pathways
    - 2. Fibrinolytic pathway
    - 3. Vascular system
  - B. Disease States
    - 1. Coagulation factor deficiencies
      - a. Acquired
      - b. Hereditary
    - 2. Fibrinolytic system
    - 3. Hypercoagulable states
    - 4. DIC
  - C. Laboratory Determinations
    - 1. PT/INR
    - 2. APTT
    - 3. Fibrinogen
    - 4. D-dimer
    - 5. Thrombin time
    - 6. Mixing studies
    - 7. Platelet function (e.g., PFA)
    - 8. Hypercoagulability assessment
      - a. Assays (e.g., protein S, protein C)
      - b. Molecular (e.g., factor V Leiden, prothrombin 20210)
    - 9. Anti-Xa

Immunology (5-10% of total exam)

- I. PRINCIPLES OF IMMUNOLOGY
  - A. Immune System Physiology
    - 1. Primary and secondary response
    - 2. B and T cells, macrophages
    - 3. Genetics
  - B. Immunoglobulins
    - 1. Classes and subclasses
    - 2. Structure
    - 3. Biologic and physical properties
  - C. Antigen-Antibody Interactions
    - 1. Principles
    - 2. Testing
      - a. Principles
      - b. Methods
  - D. Complement
    - 1. Classical and alternative pathway mechanisms
    - 2. Biologic properties
- II. DISEASES OF THE IMMUNE SYSTEM
  - A. Autoimmunity
    - 1. Systemic (e.g., SLE)
    - 2. Organ-specific (e.g., Graves disease)
  - B. Hypersensitivity
    - 1. I, II, III, IV
  - C. Immunoproliferative Diseases
    - 1. Monoclonal gammopathies (e.g., plasma cell myeloma, Waldenström macroglobulinemia)
  - D. Immunodeficiency
    - 1. Hereditary (e.g., SCID)
    - 2. Acquired (e.g., HIV)
- III. TRANSPLANTATION
  - A. Graft-versus-host Disease
  - B. HLA Typing
  - C. Tumor Immunology
- IV. INFECTIOUS DISEASE SEROLOGY
  - A. Clinical Significance and Epidemiology of Viral Pathogens (e.g., hepatitis [A, B, C], EBV, HIV, CMV, rubella, measles)
- V. SEROLOGIC PROCEDURES
  - A. ANA
  - B. Thyroid Antibodies
  - C. Rheumatoid Factor

- D. Labeled Immunoassays (e.g., ELISA)
- E. Nontreponemal Syphilis Testing (e.g., RPR)
- F. Treponemal Syphilis Testing (e.g., MHATP)
- G. Immunofluorescence

- VI. TEST RESULTS
  - A. Interpretation
  - B. Confirmatory Testing
  - C. Disease State Correlation

Microbiology (15-20% of total exam)

- I. PREANALYTIC PROCEDURES
  - A. Specimen Collection and Transport
    - 1. Patient identification and specimen labeling
    - 2. Specimen collection
    - 3. Specimen transport systems and conditions for all organisms
  - B. Specimen Processing
    - 1. Specimen prioritization and rejection criteria
    - 2. Biosafety cabinet and personal protective equipment
    - 3. Specimen preparation methods and applications
    - 4. Media
    - 5. Inoculation of media
    - 6. Incubation conditions (e.g., temperature, atmosphere, duration)
    - 7. Preparation methods for slides used for stains
  - C. Stains: Procedure, Principle, and Interpretation
    - 1. Gram
    - 2. Acid-fast
  - D. Stains: Procedure and Principle
    - 1. Modified acid-fast
    - 2. KOH and calcofluor-white
    - 3. Trichrome
    - 4. Giemsa
    - 5. Acridine orange

II. ANALYTIC PROCEDURES FOR BACTERIOLOGY

A. Blood and Bone Marrow

1. Specimen sources (e.g., peripheral, intravenous catheters)
2. Continuous-monitoring systems
3. Rapid identification/resistance detection methods
4. Species comprising skin flora and clinical significance
5. Colony morphology and identification of major pathogens (e.g., *Staphylococcus aureus*, other *Staphylococcus* spp. including coagulase-negative staphylococci, beta hemolytic streptococci, *Enterococcus* spp., *Candida* spp., *Streptococcus pneumoniae*, *Acinetobacter baumannii*, Enterobacteriaceae, *Pseudomonas* spp.)
6. Common agents of endocarditis
7. Agents of bone marrow infection (e.g., *Brucella* spp., *Salmonella* spp.)
8. Organism pathogenicity (e.g., etiology, transmission)

B. Cerebrospinal Fluid

1. Specimen sources (e.g., lumbar puncture, shunt, reservoir)
2. Colony morphology and identification of major pathogens associated with acute meningitis (e.g., *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Neisseria meningitidis*, *Escherichia coli*, *Listeria monocytogenes*, Enterobacteriaceae, *Staphylococcus aureus*, beta-hemolytic streptococci)
3. Common agents of shunt infections (e.g., other *Staphylococcus* spp. including coagulase-negative staphylococci, *Corynebacterium* spp.,

*Propionibacterium* spp.,  
*Cutibacterium* spp.)

4. Correlation with other laboratory results (e.g., glucose, protein, cell count)
5. Direct detection and molecular methods
6. Organism pathogenicity (e.g., etiology, transmission)

C. Body Fluids from Normally Sterile Sites

1. Specimen sources (e.g., pleural, peritoneal, pericardial, vitreous and aqueous humor, synovial, amniotic)
2. Indigenous organisms associated with mucosal surfaces and skin
3. Colony morphology and identification of major pathogens (e.g., *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Neisseria* spp., *Escherichia coli*, *Listeria monocytogenes*, Enterobacteriaceae, *Staphylococcus aureus*, beta-hemolytic streptococci, *Enterococcus* spp., *Pseudomonas aeruginosa*, *Acinetobacter* spp., *Clostridium perfringens*, *Bacteroides fragilis* group)
4. Molecular methods
5. Organism pathogenicity (e.g., etiology, transmission)

D. Lower Respiratory

1. Specimen sources (e.g., sputum, endotracheal aspirate, bronchoalveolar lavage, bronchial wash, bronchial brush)
2. Significance of quantitative and semiquantitative reporting of results
3. Species comprising oral flora colony and Gram stain morphology
4. Colony morphology and identification of major pathogens

5. Direct detection and molecular methods (e.g., *Streptococcus pyogenes*, *Bordetella pertussis*)
  6. Organism pathogenicity (e.g., etiology, transmission)
- E. Upper Respiratory
1. Specimen sources (e.g., throat, nasopharynx, middle ear, sinus)
  2. Indigenous flora colony and Gram stain morphology
  3. Colony morphology and identification of major pathogens
  4. Direct detection and molecular methods (e.g., *Streptococcus pyogenes*, *Bordetella pertussis*)
  5. Organism pathogenicity (e.g., etiology, transmission)
- F. Gastrointestinal
1. Colony morphology and identification of major pathogens (e.g., *Salmonella* spp., *Shigella* spp., toxigenic *Escherichia coli*, *Campylobacter* spp., *Vibrio* spp., *Yersinia enterocolitica*, *Aeromonas* spp., *Plesiomonas shigelloides*)
  2. Direct detection and molecular methods (e.g., *Clostridioides difficile*, Shiga toxin)
  3. Serotyping of *Escherichia coli*, *Salmonella* spp., and *Shigella* spp.
  4. Organism pathogenicity (e.g., etiology, transmission, virulence mechanisms)
- G. Skin, Soft Tissue, and Bone
1. Specimen sources (e.g., wound, abscess, biopsy)
  2. Indigenous flora colony and Gram stain morphology
  3. Colony morphology and identification of major pathogens
  4. Organism pathogenicity (e.g., etiology, transmission)
- H. Genital Tract
1. Specimen sources (e.g., vaginal, cervical, urethral, endocervical)
  2. Indigenous organisms colony and Gram stain morphology
  3. Methods for detection of pathogens associated with vaginitis (e.g., *Trichomonas vaginalis*, *Candida* spp., bacterial vaginosis)
  4. Culture and/or molecular detection (e.g., *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, *Streptococcus agalactiae*, and *Mycoplasma* spp.)
  5. Organism pathogenicity (e.g., etiology, transmission)
- I. Urine
1. Specimen sources (e.g., mid-stream cleancatch, catheterized, suprapubic, nephrostomy)
  2. Colony morphology and identification of major urinary pathogens (e.g., *Enterobacteriaceae*, *Enterococcus* spp., *Streptococcus agalactiae*, *Candida* spp., *Staphylococcus saprophyticus*)
  3. Correlation of colony counts with clinical significance
  4. Correlation of culture with urinalysis results
- J. Identification Methods (Theory, Interpretation, and Application)
1. Colony morphology
  2. Rapid tests used for presumptive identification (e.g., coagulase, catalase, oxidase, indole, PYR)
  3. Conventional biochemical identification (e.g., X and V factors, *Neisseria* carbohydrate utilization)
  4. Commercial kits
  5. Automated methods
  6. MALDI-TOF MS
  7. Multiplex molecular methods

- K. Antimicrobial Susceptibility Testing and Antibiotic Resistance
    - 1. Method, theory, interpretation, and application
    - 2. Phenotypic detection of resistance (e.g., beta-lactamase, ESBL, inducible clindamycin resistance, carbapenamases)
    - 3. Detection of genetic determinants of resistance (e.g., *mecA*, *vanA*, *blaKPC*)
    - 4. Intrinsic resistance patterns for common species
  - L. MRSA/MSSA, VRE, ESBL/CRE Screening
    - 1. Specimen sources
    - 2. Culture methods
    - 3. Molecular methods
  - M. BSL-3 Pathogens and Select Agents (Bioterrorism)
    - 1. Specimen sources (e.g., blood, sputum, tissue, lymph node)
    - 2. Colony morphology and rapid tests used for presumptive identification (e.g., *Bacillus anthracis*, *Yersinia pestis*, *Brucella* spp., *Francisella tularensis*)
    - 3. Role of regional laboratory and Laboratory Response Network
    - 4. Organism pathogenicity (e.g., etiology, transmission)
- III. ANALYTIC PROCEDURES FOR MYCOBACTERIOLOGY, VIROLOGY, PARASITOLOGY, AND MYCOLOGY
- A. Mycobacteriology and *Nocardia* spp.
    - 1. Specimen sources (e.g., lower respiratory, blood, soft tissue)
    - 2. Major pathogens and disease states (e.g., etiology, epidemiology, transmission)
    - 3. Acid-fast reaction, colony morphology, and growth characteristics
  - B. Virology
    - 1. Specimen sources
    - 2. Major pathogens and disease states (e.g., etiology, epidemiology, transmission)
    - 3. Direct detection of pathogens
  - C. Parasitology
    - 1. Specimen sources (e.g., stool, respiratory, blood, tissue)
    - 2. Major pathogens and disease states (e.g., etiology, epidemiology, transmission)
    - 3. Microscopic identification
    - 4. Direct and molecular detection
  - D. Mycology
    - 1. Specimen sources
    - 2. Major pathogens and disease states (e.g., etiology, epidemiology, transmission)
    - 3. Yeast identification (e.g., biochemical, automated methods, MALDI-TOF MS)
    - 4. Microscopic identification of major pathogens
    - 5. Other identification methods
- IV. POSTANALYTIC PROCEDURES
- A. Documentation Practices
  - B. Urgent and Critical Value Reporting
  - C. Result Review and Autoverification
  - D. Issuing Corrected Reports
  - E. Reporting to Infection Control/Prevention and Public Health
- Laboratory Operations (5-10% of total exam)
- I. QUALITY ASSESSMENT/TROUBLESHOOTING
    - A. Preanalytical, Analytical, Postanalytical
    - B. Quality Control
    - C. Point-of-care Testing (POCT)
    - D. Compliance
    - E. Regulation (e.g., proficiency testing, competency assessment, accreditation standards)
  - II. SAFETY
    - A. Safety Programs and Practices
      - 1. Prevention of infection with bloodborne pathogens
      - 2. Use of personal protective equipment (PPE)



3. Safe work practices
  4. Packaging and transportation of specimens and microorganisms
  5. Safety data sheets (SDS) for chemicals and reagents
- B. Emergency Procedures (e.g., needlesticks, splashes to mucous membranes, fire)
- III. LABORATORY MATHEMATICS
- A. Concentration, Volume, and Dilutions
  - B. Molarity, Normality
  - C. Standard Curves
  - D. Mean, Median, Mode, and Confidence Intervals
  - E. Sensitivity, Specificity, and Predictive Value
- IV. MANUAL/AUTOMATED METHODOLOGY AND INSTRUMENTATION
- A. Basic Laboratory Equipment
  - B. Spectrophotometry and Photometry
  - C. Mass Spectrometry
  - D. Osmometry
  - E. Electrophoresis
  - F. Electrochemistry
  - G. Fluorometry
  - H. Nephelometry

- I. Flow Cytometry
- J. Molecular Methods
- K. Automated Microbiology Processors
- L. Hematology Instrumentation

THE EXAMINEE IS EXPECTED TO KNOW THESE ADDITIONAL CALCULATIONS AND REFERENCE RANGES: CALCULATIONS

- % Transferrin saturation/UIBC/TIBC
- Unconjugated/indirect bilirubin
- LDL/Friedewald equation/non-HDL
- A/G ratio
- Timed urine calculations
- Creatinine clearance calculations
- Beer's law
- Corrected WBC counts when > 10 nRBCs present
- Manual hemocytometer counts
- Red blood cell indices (e.g., MCV, MCH, MCHC)
- Absolute cell counts given the relative values (e.g., WBCs, reticulocytes)

*All Board of Certification examinations use conventional units for results and reference ranges.*

## PROFESSIONAL ORGANIZATIONS FOR MEDICAL LABORATORY PROFESSIONALS

- American Society for Clinical Pathology (ASCP), <http://www.ascp.org>
- American Society for Clinical Laboratory Science (ASCLS), <http://www.ascls.org>
- American Medical Technologists (AMT), <http://www.americanmedtech.org>

## CERTIFICATION AND LICENSURE

### Certification

Several agencies offer certification exams for laboratory personnel. Upon completing the Sandhills Community College Medical Laboratory Technology Program, graduates are eligible to take the American Society for Clinical Pathology Board of Certification Exam at the Medical Laboratory Technician level. Passing this exam is not a requirement for obtaining the MLT A.A.S. degree; however, inability to pass this exam may result in inability to obtain or maintain employment as an MLT. Students are highly encouraged to site for the certification exam within three months of program completion.

### Licensure

Licensure is a separate process from certification. Licensure is a governmental activity taken on behalf of the public to protect that public from potential harm. Licensure of personnel is often contrasted with certification, which is a private sector activity. A major difference involves the consequences of engaging in practice without each credential. If a license is required to practice a profession in a state, it is unlawful to engage in the work without one and the consequences of doing so are very serious. Not being certified may make it more difficult to get a job, but it is not unlawful to work without it. Currently, the State of North Carolina does not require Medical Laboratory Technicians to be licensed to practice.

There are currently 11 states with laboratory personnel licensure (California, Hawaii, Florida, New York, North Dakota, Tennessee, Louisiana, Nevada, West Virginia, Montana, Georgia). Puerto Rico also has licensure. The components of the law vary state-to-state, but usually includes an annual licensing fee (some are bi-annual), a provision for continuing education, a minimum education and professional competency requirements.

If a Medical Laboratory Technician (MLT) plans to locate in a state with licensure, that state should be contacted for specific information relative to that state's laboratory practice act. This contact should be made as early as possible after the location decision has been made. Most states (except California) require documentation of certification from an acceptable certification agency. Other things to expect are fingerprinting (Louisiana, possibly other states), documentation of certification, and documentation of education, training, and competency. Some states require documentation of a defined number of contact hours prior to issuing a license. California does not recognize any certification or any other state license. Check with other states regarding reciprocity; most give reciprocity for another state license as stringent or more stringent than that state.

For the most up to date information on individual state licensure requirements, please reference: [Personnel Licensure - ASCLS](#)

## SCC MEDICAL LABORATORY TECHNOLOGY ASSOCIATE DEGREE COURSE REQUIREMENTS

The program cohort/class begins annually, each fall semester. The MLT courses are sequenced in a progressive fashion. All students will begin with MLT-110 Intro to Medical Laboratory Technology in the first 8-week session of fall semester. After completing MLT-110 there are a number of pathways students may take to fulfill the remaining requirements depending on their preference and capacity. Students will work with their MLT Program advisor to determine the best pathway for their success.

Courses required to complete the A.A.S. in Medical Laboratory Technology are:

Course Number	Course Name	Credits	Offered		
			Fall	Spr	Sum
<b>GENERAL EDUCATION</b>					
<b>ACA 115</b>	Success & Study Skills	1	X	X	X
<b>BIO 163 or BIO 165 &amp; 166</b>	Basic Anatomy & Physiology Anatomy & Physiology I and II	5 4/4	X X	X X	X X
<b>CHM 130 &amp; 130A or CHM 151 &amp; 152</b>	General, Organic, & Biochemistry General Chemistry I and II	4 4/4	X X	X X	X X
<b>ENG 111</b>	Writing & Inquiry	3	X	X	X
<b>ENG 112 or 114</b>	Writing/Research	3	X	X	X
<b>MAT 143 or Higher level course</b>	Quantitative Literacy	3 3-4	X	X	X
<b>MED 120</b>	Survey of Medical Terminology	2	X	X	X
<b>Variable</b>	Humanities Elective	3	X	X	X
<b>Variable</b>	Social Science Elective	3	X	X	X
<b>MLT DIDACTIC COURSES</b>					
<b>MLT 110</b>	Intro to MLT	3	1		
<b>MLT 111</b>	Urinalysis & Body Fluids	2	2		2
<b>MLT 120</b>	Hematology/Hemostasis I	4	2		
<b>MLT 126</b>	Immunology & Serology	2	2		
<b>MLT 127</b>	Transfusion Medicine	3		2	1
<b>MLT 130</b>	Clinical Chemistry I	4		2	
<b>MLT 140</b>	Intro to Microbiology	3	1		
<b>MLT 215</b>	Professional Issues	1	X	X	X
<b>MLT 220</b>	Hematology/Hemostasis II	3		1	
<b>MLT 240</b>	Special Clinical Microbiology	3		1	
<b>MLT CLINICAL COURSES</b>					
<b>MLT 251*</b>	MLT Practicum I (Phlebotomy)	1	A	A	A
<b>MLT 253</b>	MLT Practicum I (Microbiology)	3	A	A	A
<b>MLT 261</b>	MLT Practicum II (Urinalysis)	1	A	A	A
<b>MLT 262</b>	MLT Practicum II (Hematology/Hemostasis)	2	A	A	A
<b>MLT 263</b>	MLT Practicum II (Chemistry)	3	A	A	A
<b>MLT 273</b>	MLT Practicum III (Immunology/ Immuno-hematology)	3	A	A	A

X = full semester course, 1 = first half semester, 2 = second half semester, A = as needed/arrange

Examples of several common pathways are illustrated below:

	<b>FAST TRACK</b>	<b>ACCELERATED</b>	<b>TRADITIONAL</b>	<b>PART-TIME</b>
<b>Completed prior to program entry</b>	ACA 115 BIO 163 CHM 130+130A ENG 111 ENG 112 MAT 143 Humanities Elec Social Sci Elec	ACA 115 BIO 163 ENG 111 MAT 143 MED 120 Social Sci Elec		
<b>Fall 1</b>	MLT 110 MLT 140 MLT 111 MLT 120 MLT 126 MLT 251 MED 120	MLT 110 MLT 140 MLT 126 MLT 120 MLT 251 CHM 130+130A	MLT 110 MLT 126 MLT 120 MLT 251 ACA 115 MED 120 CHM 130+130A	MLT 110 MLT 126 ACA 115 CHM 130+130A
<b>Spring 1</b>	MLT 127 MLT 130 MLT 240 MLT 220 MLT 262 MLT 253	MLT 240 MLT 220 MLT 130 ENG 112 Humanities Elec	MLT 220 MLT 130 MAT 143 BIO 163	MLT 130 MED 120 BIO 163
<b>Summer 1</b>	MLT 261 MLT 263 MLT 273 MLT 215	MLT 127 MLT 111	MLT 127 MLT 111	MLT 111 ENG 111
<b>Fall 2</b>		MLT 253 MLT 261 MLT 262 MLT 263 MLT 273 MLT 215	MLT 140 MLT 262 MLT 263 ENG 112 Social Sci Elec	MLT 140 MLT 120 MAT 143
<b>Spring 2</b>			MLT 240 MLT 261 MLT 253 MLT 273 MLT 215	MLT 240 MLT 253 ENG 112
<b>Summer 2</b>				MLT 127 MLT 261
<b>Fall 3</b>				MLT 251 MLT 263 Social Sci Elec Humanities Elec
<b>Spring 3</b>				MLT 220 MLT 262 MLT 273 MLT 215

## PHLEBOTOMY CLINICAL EXPERIENCE EXEMPTION

The requirement for MLT-251 MLT Practicum I (Phlebotomy) may be waived for students who meet one or more of the following conditions:

1. Hold a current phlebotomist certification from ASCP, AMT, ACA, AMCA, NCCT, NCA, NHA, another recognized accrediting body.
2. Completed a phlebotomy training program at an accredited institution within the last 5 years.
3. Have at least 12 months full time phlebotomy experience within the last 5 years.

To qualify for exemption, students must submit a Phlebotomy Verification Form and documentation indicating that they meet one of the above conditions to the Program Coordinator at least one semester prior to their anticipated graduation date. The Phlebotomy Verification Form can be found in Appendix D.

## ESSENTIAL FUNCTIONS FOR MEDICAL LABORATORY TECHNICIANS

Medical Laboratory Technology Students must be able to:

### Physical Ability

- Move freely and safely about a laboratory.
- Reach laboratory bench tops and shelves, patients lying in hospital beds or patients seated in specimen collection furniture.
- Perform moderately taxing continuous physical work, often requiring prolonged sitting, over several hours
- Maneuver phlebotomy and culture acquisition equipment to safely collect valid laboratory specimens from patients
- Be able to lift and move reagents and boxes >50 lbs.
- Control laboratory equipment (i.e. pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures.
- Use an electronic keyboard (i.e. 101-key IBM computer keyboard) to operate laboratory instruments and to calculate, record, evaluate, and transmit laboratory information.
- Perform all tasks independently

### Visual & Hearing

- Observe laboratory demonstrations in which biologicals (i.e., body fluids, culture materials, tissue sections, and cellular specimens) are tested for their biochemical, hematological, immunological, microbiological, and histochemical components.
- Characterize the color, odor, clarity, and viscosity of biologicals, reagents, or chemical reaction products.
- Employ a clinical grade binocular microscope to discriminate among fine structural and color (hue, shading, and intensity) differences of microscopic specimens.
- Read and comprehend text, numbers, and graphs displayed in print and on video monitor.
- Listen and appropriately respond to verbal directions.
- Able to hear and respond appropriately to spoken English both directly and by telephone.

### **Speech/Communication**

- Read and comprehend technical and professional materials (i.e. textbooks, magazines, and journal articles, handbooks, and instruction manuals).
- Follow verbal and written instructions in order to correctly and independently perform laboratory test procedures.
- Clearly instruct patients prior to specimen collection
- Effectively, confidentially, and sensitively converse with patients regarding laboratory tests.
- Communicate with faculty members, fellow students, staff, and other health care professionals verbally and in a recorded format (writing, typing, graphics, or telecommunication).
- Independently prepare papers, prepare laboratory reports, and take paper, computer, and laboratory practical examinations

### **Critical Thinking**

- Identify cause-effect relationships in laboratory situations
- Solve problems
- Consider consequences of solutions
- Make and defend sound judgments
- Establish priorities
- Distinguish significant from insignificant
- Note relationships and patterns
- Evaluate outcomes
- Organize workload and manage time in order to complete technical tasks within realistic time limits

### **Emotional Stability**

- Support peers and health care professionals in order to promote a team approach to learning, task completion, problem solving and patient care
- Be honest and forthright about errors
- Critically evaluate performance, accept constructive criticism, and be responsible for improving performance
- Be compassionate and ethical
- Ability to work in a high-stress environment: respond to emergencies and maintain emotional control
- Calmly react to urgent situations
- Recognize own stress level and communicate need for assistance appropriately
- Set realistic expectations to meet requirements
- Perform multiple tasks and establish priorities

### **Ability to Travel**

- Able to commute to numerous clinical laboratory sites for clinical training

# MLT PROGRAM ACADEMIC POLICIES AND PROCEDURES

## Grading Policies

Evaluation of student performance includes consideration of knowledge level (didactic), technical skill level (psychomotor), and professional behaviors (affective). Instruments used in the evaluation process are based on written objectives and include written, practical, and oral examinations, take-home assignments, projects, and evaluation forms/rubrics for each rotational areas and class (see Appendix C for examples). The MLT Program grading scale is as follows:

- A = 90.0-100%
- B = 83.0-89.99999%
- C = 76.0-82.99999%
- D = 68.0-75.99999%
- F < 68.0%

Students are required to obtain a minimum grade of “C” for each course. To obtain a minimum grade of “C” in each MLT program **didactic course**, students must meet **all\*** the following requirements:

Psychomotor Laboratory Technical Evaluation	minimum of 76%
Affective Performance Evaluation	minimum of 76%
Didactic Course Evaluation (quizzes, exams, etc.)	minimum of 76%
Critical Elements	meet minimum outlined below

To obtain a minimum grade of “C” in each clinical rotation course, student must meet **all\*** the following requirements:

Module Quiz Score (Average)	minimum of 76%
Final Exam Score	minimum of 76%
Clinical Rotation Evaluations	minimum of 76%

**\*A grade of no higher than “D” will be given to a student who does not meet all the above requirements.**

### Critical Elements

Through practical skills assessment, students must demonstrate competency in the following MLT Program Critical Elements. Critical Elements are those basic learned psychomotor skills that each student must achieve in order to perform work accurately and precisely as a laboratorian. Failure to accurately and proficiently perform these tasks can result in dismissal from the MLT Program, regardless of the student’s course average. The critical elements for each course are listed as follows:

- MLT-110: Phlebotomy
  - Perform proper hand hygiene.
  - Perform a successful venipuncture.
- MLT-126: Immunology
  - Read and interpret tube agglutination within 1+ of the instructor’s result
- MLT-140 & MLT-240: Microbiology
  - Gram stain performance and interpretation with >80% accuracy
- MLT-130: Chemistry
  - Creation and interpretation of quality control charts with > 80% accuracy

- Know the reference ranges for sodium, potassium, chloride, CO<sub>2</sub>, BUN, Creatinine, and Glucose
- MLT-120 & MLT-220: Hematology
  - Make an acceptable peripheral blood smear
  - Identify the 5 normal and mature leukocytes in a peripheral blood smear or digital image with 100% accuracy.
  - Identify blasts in a peripheral blood smear or digital image with 100% accuracy.
- MLT-127: Blood Banking
  - ABO, Rh, antibody detection, and compatibility studies with 100% accuracy
- MLT-111: Urinalysis
  - Identify and differentiate cells, crystals, and microorganisms in a urine microscopic examination with > 80% accuracy.

## Attendance Requirements

Attendance in all MLT courses is mandatory. Because the student will be learning job skills and application of theory, attendance in face-to-face classes, on-campus labs, and clinical site rotations attendance is monitored and recorded. Students must make every effort to attend all class sessions, including lecture, labs and clinical rotations. If a student must miss class for any reason, they are required to notify the instructor (and preceptor, if at a clinical site) as soon as they are aware they will be absent. The notification can be in the form of email, voice message, and/or text.

Opportunities to make up work missed due to absence will be at the discretion of the course instructor or clinical site.

### *Definitions:*

- **Tardy in an on-campus lecture or lab class:** A tardy is recorded on a student's attendance record when the student is not in their classroom/lab seat at the minute the class is scheduled to begin.
- **Tardy in a clinical site rotation:** A tardy is recorded on a student's attendance record when the student is not in his/her assigned rotation bench with PPE on and a writing utensil in hand, at least 5 minutes before the assigned start time. Students and trainers are required to sign the attendance sheet each day of training. Failure to sign can count as unexcused absence during a clinical rotation.
- **Absence in an on-campus lecture:** An absence is marked on a student's attendance record any time in which the student is absent for more than 20% of the allotted lecture time.
- **Absence in an on-campus lab class:** An absence is marked on a student's attendance record any time in which the student is absent from the whole period of instruction OR for more than 10% allotted lab class time OR misses the instructor led in-class demonstration. In general, missed labs cannot be made up. If permission is given to make up a lab, it will be arranged at the convenience of the instructor.
- **Absence in a clinical site rotation:** Students are required to keep a timesheet of their clinical rotation hours. Missed time will be measured in minutes. While absences may be excused during clinical rotations within the limits defined in this policy, students are expected to complete the minimum number of hours required for the course (48 hours per credit) and fulfill all the requirements in the clinical rotation checklists regardless of absence. Students who are not able to complete their checklists due to absence or who have not accrued the required minimum number of hours will be required to make up the missed hours in order to fulfill all the course



requirements. Make up hours must be completed at a time that is convenient for the clinical site, and clinical sites reserve the right to deny make-up hours.

- **Excused Tardy/Absence:** Excused absences will only be approved for illness (student's own illness or the illness of an individual under their care), inclement weather, or other important events that are out of the student's control and/or cannot reasonably be rescheduled (for example, death of a family member, car accident, court date, jury duty, doctor's appointments). Absences for other personal commitments (for example, leisure travel, family events, work) will not ordinarily be excused. In order for an absence to be considered excused, students must:
  - Notify the instructor for their course (and your preceptor, if at a clinical site) as soon as they are aware they will be absent. If they miss several days in a row for the same event, they must notify the preceptor and the course instructor each day. For planned absence during clinical rotations, students are expected to request permission from the course instructor and receive approval prior to discussing the absence with their clinical preceptor. Only the course instructor has the authority to determine whether an absence meets the criteria to be excused. If the course instructor denies approval for the absence, the student is expected to report for clinicals and is not permitted to seek approval for the absence from their preceptor.
  - Receive written or verbal approval of your absence from the course instructor.
  - Provide documentation to support the reason for the absence if requested.
- **Unexcused Tard/Absence:** Absences will be considered unexcused if you did not notify your instructor (and preceptor, if at a clinical site), did not receive written or verbal approval, and/or are not able to provide documentation upon request.

### *Procedures*

- **Unexcused Absence/Tardy:**
  - Following the first unexcused absence or tardy in a single course, the Program Coordinator will contact the student to issue a verbal warning about their attendance and reinforce the program's absence policies.
  - Following a second unexcused absence or tardy in a single course, the Program Coordinator will send the student a formal warning letter via email.
  - A third unexcused absence or tardy in a single course will result in dismissal from the MLT program.
- **Accrued Absence/Tardy**
  - **Didactic Courses:** If a student accrues absences or tardiness (both excused and unexcused) totaling 10% of the total class hours, the student will be placed on probation. The course instructor will have a meeting with the student to reinforce the program's absence policies and develop an attendance probation plan. See Appendix B. Failure to meet the benchmarks set out in the probation plan may result in failure of the course or dismissal from the MLT program.
  - **Clinical Rotations:** For each clinical practicum credit, the State of North Carolina mandates a minimum of 48 hours of clinical time. To comply with this requirement, students must keep a timesheet of their clinical hours and log no less than the minimum number of required hours. Clinical rotations will ordinarily be scheduled for the exact number of days required to meet the minimum hours, so most missed time will need to be made up. Make-up hours will be completed at a time convenient for the clinical site, and clinical sites reserve the right to deny make-up time for any reason. For each absence,

students will be required to submit an "Absence Sheet" detailing the reason for the absence, documenting approval from the clinical preceptor and course instructor, and outlining a plan for making up the hours.

Examples:

- a. **A 50 minute lecture:** A student will be marked absent if he/she arrives more than 10 minutes late OR leaves the classroom for more than 10 minutes.
- b. **A 90 minute lecture:** A student will be marked absent if he/she arrives more than 18 minutes late OR leaves the room for more than 18 minutes.
- c. **A 170 minute on-campus lab:** A student will be marked absent if he/she arrives more than 17 minutes late OR leaves the lab more than 17 minutes without the instructor's permission. In a typical 170 minute lab, two 10-minute breaks are permitted, upon direction of the instructor.
- d. **A 16 week on-campus course with 90 hours of class time:** A student will be placed on probation if he/she misses 9 hours of class time.

**Please read the SCC Student Handbook for additional information about school delays or cancellations due to inclement weather or other emergencies.**

## ACADEMIC PROGRESSION THROUGH THE MLT PROGRAM

Students can take the MLT courses only after acceptance into the MLT Program. The general education courses can be taken before entering the program or while enrolled in the program, keeping in mind the prerequisites.

Students are required to maintain a minimum cumulative GPA above 2.0. Students will be dis-enrolled from the MLT Program when:

1. The cumulative GPA falls below 2.0
2. A student receives a grade of "C" or lower in two or more MLT courses.
3. If a student receives a final course grade <C in a required general education course, the student may be dis-enrolled from the MLT program if that course cannot be repeated before the expected graduation date.
4. Student fails to pass a required Pre-Clinical Competency Exam.

If a student receives a grade of "C" or lower in a single didactic MLT course:

- The student may continue with other MLT didactic courses for which the failed course is not a prerequisite.
- The student may retake the failed course once. If the student does not receive a grade of "C" or higher on the second attempt, they will be disenrolled. Retaking MLT courses is dependent on seat availability. Priority will be given to students enrolling in the course for the first time.
- The student may not progress to **any** clinical practicums until the course is retaken and passed with a "C" or better.

## Progression to Clinical Rotations

Students may progress to clinical rotations once they have completed the prerequisite course(s) for the rotation. Clinical rotation courses (MLT 251, 253, 261, 262, 263, and 273) will be offered based on clinical

site capacity and student readiness. Clinical schedules will be arranged with the MLT Program Clinical Coordinator. Prerequisites for clinical courses are listed below:

Course	Department	Prerequisites
MLT-251	Phlebotomy	MLT-110
MLT-253	Microbiology	MLT-140 & 240
MLT-261	Urinalysis	MLT-111
MLT-262	Hematology/Hemostasis	MLT-120 & 220*
MLT-263	Chemistry	MLT-130
MLT-273	Immunology/ Immunohematology	MLT-126 & MLT-127

\*MLT-220 may be taken concurrent with MLT-262

Students who completed the prerequisite course(s) during the session immediately preceding their rotation may progress directly into the rotation provided their score on the final exam for the prerequisite course(s) was >76%. Where a gap of one 8-week session or more exists between completion of the prerequisite course and the start of the clinical rotation OR the student scored less than 76% on their final exam(s) in the prerequisite course(s), the student will be required to complete a Clinical Entrance Review for the topic and pass a Pre-Clinical Competency Exam with a score  $\geq 76\%$  at least 2-weeks prior to the start date of their rotation. Students who do not pass with Pre-Clinical Competency Exam will have one opportunity to retake it. Students who do not pass on a second attempt will not be permitted to proceed to the clinical rotation. Ability to proceed to clinicals at a later date will be dependent on clinical site availability and the discretion of the Program Coordinator.

## Exit Exam

The Exit Exam is given at the conclusion of MLT-215, which is taken in the final semester. The exam covers all MLT courses, including clinical instruction. The exam questions are a higher level and require a core knowledge of clinical laboratory science as well as an ability to analyze lab data in order to deduce the correct answer. This exam is intended to be a mock certification exam and will help students gauge their preparedness for the ASCP BOC MLT exam. Students are not required to pass the exam, but scores on this exam will contribute to the final grade in MLT-215.

## LEAVES OF ABSENCE

Students are expected to enroll in at least one MLT course each semester until completion of the program. It is expected that students will complete the program between 12 and 36 months, depending on the pathway they choose to pursue.

Occasionally a student needs to take a leave of absence from the program voluntarily. If a student plans to take a leave of absence for one semester or more, they should submit a Leave of Absence Request Form to the Program Coordinator, stating their intent to continue with the program and detailing the anticipated length of their absence. If a Leave of Absence Request Form is submitted, a seat will be held for the returning student.

If a student leaves the program voluntarily *without* submitting a Leave of Absence Request Form, the Program Coordinator will assume the student does not intend to return and will not hold a seat for them. If such students wish to return at a later date, they must submit a request for reinstatement (see Appendix A) no later than 1 month prior to their intended return.

Regardless of the nature of a leave of absence, students whose absence results in a gap of more than 12 months may be required to demonstrate retention of knowledge and skills relevant the discipline prior progressing. The MLT faculty will develop the method/process to demonstrate knowledge and skills on a case by case basis. This may require a formal “challenge” or an independent study. Students must repeat the didactic course if the challenge or independent study results in a failing grade. It is strongly recommended that students complete the clinical component for each discipline no later than one year (12 months) following completion the didactic prerequisites for the rotation.

## REINSTATEMENT TO THE PROGRAM AND RETURNING TO THE PROGRAM AFTER A LEAVE OF ABSENCE

Students who previously dropped out without submitting a Leave of Absence Request Form or were dismissed from the program are considered returning students, such as:

1. Students who failed two or more MLT courses and are waiting to repeat the course
2. Students who drop out for medical or other personal reasons

Students must document in writing the intent to return to the program at least 1 month prior to intended restart date.

- Reinstatement is dependent upon eligibility and space availability. The MLT program does not guarantee space will be available.
- Returning students must submit a Readmission Request Form to the Program Coordinator at least one month prior to his/her return to class. See example in Appendix A.
- Reinstatement is at the discretion of the Program Coordinator. Following review of the Readmission Request Form, the Program Coordinator may request further information or establish further conditions for reinstatement based on the individual student’s circumstances.
- Students are permitted one reinstatement only.
- Faculty reserve the right to assess prior MLT knowledge and skills. As a result of the assessment, faculty will develop a plan listing conditions for reinstatement. Students not completing the plan as listed will be denied reinstatement.
- Students will be held to MLT Program policies, procedures, and curriculum requirements that are most current upon reinstatement, not the policies in place when the student first began the MLT program.
- If the student left the program because of a positive drug screen or background check, the student will be allowed to return only when the issue is resolved, and the clinical affiliate(s) approve of the new results.

## MLT STUDENT BEHAVIORAL EXPECTATIONS

### Student Behavior

For campus-wide regulations for student behavior refer to the Sandhills Community College website for the most up to date college student handbook at:

<https://www.sandhills.edu/wp-content/uploads/2020/08/20-21-Student-Handbook.FINAL .pdf>

## Laboratory Professional Attitudes and Values

Knowledge and manual skills are very important in the laboratory; however, laboratory professionals are also guided by a common set of values and attitudes that are evident in our behavior. Throughout the MLT Program, efforts will be made to instill these values and behaviors, and students' "soft skills" will be evaluated alongside their technical and academic performance. Graduates of this program are a reflection of the program, the college, and the faculty. We take our responsibility to the profession and to the student seriously. In the end, it is much better to learn what the behavioral expectations are at the college, rather than discover them "accidentally" on the job, and perhaps lose employment.

Below are listed of the "soft skills" that MLT graduates are expected to exhibit, as well a list of behaviors that would indicate a student has mastered the skill. These objectives will be used to evaluate students' affective performance in all MLT didactic and clinical courses.

Category	Objectives	Effective Behavior
<b>Attitude</b>	<ol style="list-style-type: none"> <li>1. Students will follow classroom and laboratory policies without complaint.</li> <li>2. Students will accept responsibility when they make mistakes and make efforts to correct their errors.</li> <li>3. Students will apply feedback from instructors and preceptors to improve their knowledge, technique, or behavior.</li> </ol>	Follows program, clinical site and course policies consistently. Accepts responsibility for own work/mistakes. Acknowledges errors and learns from them. Accepts constructive criticism of skills and behavior and uses critique for improvement.
<b>Engagement</b>	<ol style="list-style-type: none"> <li>4. Students will meaningfully contribute to class discussions.</li> <li>5. Students will answer questions when called upon.</li> <li>6. Students will put aside other interests while in class or clinicals.</li> </ol>	Focuses on course material during class. Participates in class discussions and group activities.
<b>Attendance</b>	<ol style="list-style-type: none"> <li>7. Students will value class and clinical time and make every effort to attend all scheduled class and clinical sessions.</li> <li>8. Students will respect the instructor and their classmates' time by arriving to class on time.</li> <li>9. Students will commit to attending the full class period</li> </ol>	Arrives and is ready to start at the scheduled time and remains until all work is completed. Returns from break at specified times. Informs instructor as early as possible of anticipated absences.
<b>Initiative</b>	<ol style="list-style-type: none"> <li>10. Students will prepare for class/clinical by completing assignments and reviewing the lecture material ahead of class.</li> <li>11. Students will recognize the importance of learning the course material to their future competence as professionals.</li> <li>12. Students will proactively seek answers to their questions.</li> <li>13. Students will proactively develop study resources.</li> </ol>	Arrives prepared. Has looked ahead and studied what will be covered that day. Asks for additional activities when assigned activities are complete. Concerned with learning info/skills needed to work as an MLT not just to achieve good grade. Organizes study sessions with other students. Shares study and learning resources with the class. Seeks answers from course resources before asking the instructor.

<p><b>Communication</b></p>	<p>14. Students will use professional language and tone when communicating with instructors, preceptors, classmates, other healthcare professionals, and patients both verbally and in writing.</p> <p>15. Students will communicate and respond to communication in a timely manner.</p> <p>16. Students will answer questions from classmates, preceptors, and other healthcare professionals clearly and with a focus on patient care.</p> <p>17. Student will listen carefully to verbal communication from instructors, preceptors, classmates, patients, and other healthcare professionals.</p> <p>18. Students will carefully read emails, assignments, and procedures in order to fully understand them.</p>	<p>Effectively conveys and receives ideas; responds appropriately. Emails use a professional communication style. Interactive. Communicates in a positive manner with instructors and other students. Listens carefully and is able to follow verbal instructions. Listens to patients when they ask questions or express concerns. Reads all written communication received from instructors and preceptors.</p>
<p><b>Respect</b></p>	<p>19. Students will work effectively with their classmates, preceptors, instructors, and other healthcare professionals regardless of their professional and personal background.</p> <p>20. Students will respect the dignity of patients and their families and caregivers.</p> <p>21. Students will recognize the value of and scope of practice of other healthcare professionals.</p> <p>22. Students demonstrates respect for their peers, instructors, and preceptors by maintaining a learning environment free from distractions and disruptive behavior.</p>	<p>Contributes to a positive classroom environment. Works effectively with classmates. Is respectful of instructors', classmates', and preceptors' knowledge, skills, viewpoints, and experiences. Speaks respectfully and maintains the dignity of patients, patients' families/caregivers and other healthcare professionals in both real-world and case-based scenarios. Maintains an environment conducive to learning for their classmates.</p>
<p><b>Equanimity</b></p>	<p>23. Students will adapt quickly to change.</p> <p>24. Students will work effectively in a busy, noisy work environment.</p> <p>25. Students will demonstrate patience with their classmates, instructors, coworkers, preceptors, patients, and other healthcare professionals.</p> <p>26. Students will demonstrate resilience when they struggle with a skill or make a mistake.</p> <p>27. Students will recognize that there are often multiple correct ways to do a task and demonstrate flexibility when asked to perform a task differently than their usual method.</p>	<p>Alert and interactive. Can "go with the flow." Performs well in busy classroom environment. Deals well with a variety of personalities. Demonstrates patience with instructors and coworkers. Demonstrates flexibility and ability to adapt to change.</p>

<b>Maintenance</b>	<p>28. Students will demonstrate respect for campus and clinical site equipment by handling it with care and keeping up with maintenance protocols.</p> <p>29. Students will reduce waste by only using the resources they need and avoiding unnecessary repeat testing.</p> <p>30. Students will demonstrate respect for their classmates and coworkers by keeping personal and communal laboratory workspaces clean and organized.</p> <p>31. Students will recognize the impact of a clean and organized workspace on error reduction and patient outcomes.</p>	<p>Leaves work area as it was found. Assists with cleaning common areas at the end of lab. Handles lab equipment with care. Ensures that common spaces are cleaned and organized before leaving class.</p>
<b>Integrity</b>	<p>32. Students will strive to produce high quality work, recognizing that their competence impacts patient care.</p> <p>33. Students will recognize the impact of falsified results and hidden mistakes on patient safety.</p> <p>34. Student will uphold the highest levels of academic integrity.</p> <p>35. Students will maintain the confidentiality of patient data.</p>	<p>Completes all work independently without copying the work of classmates or published sources. Records all lab values based on actual results rather than anticipated results. Is honest when they make a mistake. Cares about the quality/accuracy of their work.</p>
<b>Judgement</b>	<p>36. Students will only make decisions that are within their scope of practice.</p> <p>37. Students will integrate information from multiple sources in order to think through complex problems.</p> <p>38. Students will consider patient impact and other downstream effects when making decisions.</p> <p>39. Students will seek advice from more experienced personnel when they encounter problems beyond their skill level.</p>	<p>Exercises good personal judgement. Recognizes the limitations of their knowledge and seeks assistance when necessary. Makes decisions that demonstrate critical thinking ability.</p>

### MLT Program Classroom Confidentiality Policy

You may share results from identifiable student/instructor donated specimens with only those that have a “need to know”. Those that have a “need to know” are the instructors that are evaluating your laboratory performance, the person whose specimen you are testing, those members of your immediate lab group that are testing the same specimen.

If you accidentally find an unexpected result, you may share that information with an instructor. There may be a technical reason for the abnormal/unexpected result. For example, the instructor may have “spiked” the specimen to produce abnormal results. Additionally, many of the reagents used in the MLT student lab are expired, our instruments are not validated, and our quality control processes do not meet

the standards required of an accredited diagnostic laboratory. Laboratory values obtain in the student lab may not reflect actual values and should not be used to inform medical decisions.

If you have concerns about your personal lab results becoming “public” knowledge, do not donate specimens for laboratory testing.

## POLICIES FOR ASSIGNING CLINICAL SITE ROTATIONS

MLT faculty make the final decision for site assignments based on clinical site availability and the best educational interests of the cohort. While students may be given the opportunity to express their clinical site preference, student preference will only be one factor among many in the final decision. Highest priority will be placed on giving all students within the cohort an equivalent educational experience and ensuring a good educational fit between students and their clinical site. Students must be prepared to travel up to 75 miles each way from the college to the clinical site. Money for fuel and reliable transportation are required and are paid by the student.

Placement is NOT determined by such factors as:

- Student has not met health, immunization, drug or background check requirements of one or more sites
- Student does not have transportation
- Student has relative working at the clinical site
- Student is employed at the clinical site

Other students in the MLT program will not be inconvenienced by changing clinical assignments to accommodate a student with any type of issue.

In the event there are not enough clinical sites to accommodate all students ready to progress to clinical practicums, the following procedures will be followed:

- Students with the highest GPA in the MLT courses will be placed first.
- Waiting students will be placed as soon as a site is available.
- Waiting for a clinical site will delay graduation.
- Students are NOT allowed to contact sites or attempt to make arrangements outside of the MLT Program for clinical sites.

Clinical Practicums are difficult to find. Therefore, should a clinical preceptor reject a student for any reason, the student is removed from the site immediately. There is NO guarantee that another clinical sited can be found immediately. Based on the cause of the rejection, a student may be dis-enrolled from the MLT Program. When the rejection was not caused by the student’s unprofessional behavior or technical deficiencies, a student’s graduation may be delayed for up to one year if another clinical affiliate is not immediately located.



## POLICY FOR INCOMPLETE WORK IN CLINICAL TRAINING OR NOT ATTAINING COMPETENCY

Incompletes (I's) are not given for clinical training, in general. Only under highly unusual circumstances would an incomplete grade (I) be given and the student allowed to finish the clinical training at a later date, such as the COVID19 pandemic.

Students who do not complete clinical training within the scheduled time frame will receive a failing grade and will not pass.

Students who do not attain minimum competency standards in clinical training will not pass clinical training and may be withdrawn from the clinical site before the end of the semester.

## CLINICAL SITE REQUIREMENTS

### Drug Screen and Background Check

- A. Every MLT student must comply and ensure that the required immunizations are completed and in the Castle Branch Medical Document Tracker no later than the first day of the student's first semester in the program (Fall).
- B. Every student must submit to a drug screen and background check through CastleBranch.com. The registration, collection, and testing/resulting must be completed no later the first day of the student's first semester in the program (Fall). Specific directions and codes will be given to the student by the program director during the program orientation.
- C. If a student tests positive on the DRUG SCREEN OR BACKGROUND CHECK, the student is generally NOT permitted to complete the MLT program because the clinical affiliates will not approve the student with certain criminal convictions or illicit drug history. The student will be allowed to continue in the didactic phase of the program but is NOT allowed to enter the second year's clinical site training. Therefore, he/she will not be able to graduate.
- D. When a student receives a positive drug screen or background result from Castle Branch, he/she is responsible for following the directions given from Castle Branch. NO SCC instructor is or should have any knowledge of a student's drug screen nor background check results. The student should not discuss their results with any faculty or advisor employed by SCC.
- E. The drug screen and background results are reviewed by only the Human Resource representative or their designee at each clinical site. Each student record is reviewed by each clinical site, by that site's specific criteria. Should one clinical site reject a student based on that student's background check or drug screen, that student is not allowed to train at any other site. In order for a student to be eligible to train at any clinical site, that student must be eligible to train at all MLT clinical sites.

If the student fails to "correct" any drug screen, background check, or health/immunization issue by September 15<sup>th</sup> of the student's first semester, the student will be dis-enrolled from the MLT Program and not allowed re-entry until the issue is completely resolved.

### Time Expectations at Clinical Sites

Clinical rotation dates will be arranged on an individual basis by the Clinical Coordinator. On dates a student is scheduled for clinical experience, students are expected to be at the clinical site no fewer than 8 hours (excluding lunch) unless otherwise arranged. Starting times will vary according to the site and to

the department. The starting times are determined by the clinical site, and the MLT faculty has no control over start times. Plan on starting times between 5:00 AM and 8:00 AM.

## Service Work

Students are not to take place of a regularly paid employee during their clinical hours. Students can work at the clinical site; however, it must be noncompulsory and must be outside regular student hours.

## The Impaired Student

Any student that is deemed a danger to others or to self can be requested to leave the clinical site of the laboratory. The impairment covers psychosocial, prescription medications, nonprescription medications, and alcohol.

Consequences of student impairment can vary on a case by case situation. Depending on the root cause of the impairment, a one-day absence may be assigned. If the impairment is viewed as severe and detrimental by the clinical preceptor, it could result in immediate rejection from the clinical site and subsequent dis-enrollment from the MLT Program.

## Confidentiality Policies and Statements

As a student you will have access to patient medical information. This information is private and is not to be discussed outside the college or the clinical site. All patient information is protected by the health information portability and accountability act of 1996 (HIPAA). For specific regulatory information on HIPAA, refer to the following website: <http://www.hhs.gov/ocr/privacy/hipaa/understanding/>

- Any data or information pertaining to the diagnosis, treatment, or health of any member or to an application obtained from such person or from any physician or provider by health plan shall be held in confidence and shall not be disclosed to any person except (1) to the extent that it may be necessary to carry out purposes required by or to administer this agreement.
- You may not discuss any person's medical information with anyone in such a manner that the patient can be identified by name or other description.
- The only time the student can discuss the patient medical information with identifying information is where it is necessary for the diagnosis or treatment of the patient.
- Confidential information includes but is not limited to: patient information, medical records, hospital information, physician information, and employee records that may be encountered in the course of the clinical practicum.
- Maintaining confidentiality means to share information only with healthcare professionals who have the "need to know".
- State and federal laws prohibit the unauthorized use and/or dissemination of patient medical information by health care personnel.
- Health care workers are entrusted to protect medical information about patients and obligated not to seek out information their job does not require.
- Civil and criminal penalties may be imposed to protect the patient's right to privacy.
- Confidentiality pertains to the patients at the clinical sites and any patient information found in the MLT program. This includes any testing that is performed, specimens regardless of source, such as the hospital or from classmates, friends, etc.

Depending on the circumstances of the break in confidentiality, recourse varies. Consequences may include:

- a. Student is reprimanded.
- b. Student loses points or grade is lowered for the course in which occurrence takes place.

- c. Student is dismissed from the clinical site if breach occurs in directed practice.
- d. Below is a list, while not all inclusive of actions that may be considered breaches of patient confidentiality:
  - a. Reading a patient's chart for the sake of curiosity or other personal reasons.
  - b. Conversations with other personnel, who do not have a need-to-know about patients.
  - c. Conversations with family and friends about patients.
  - d. Attempting to seek electronic or hard copy information (e.g. for a friend or family member) not required by your position.
  - e. Virtually any disclosure of patient information to a third party without proper authorization or statutory right or obligation to do so.

### **CONFIDENTIALITY PLEDGE**

*I hereby reaffirm my pledge that I will not disclose, to anyone, any medical information about patients that I may acquire as a result of my clinical education, without patient permission to do so or as otherwise allowed by law. In addition, I will not seek out information about patients that I do not require to perform my assigned duties. I understand that any attempt to seek out information, hard copy, electronic or verbal, not required by my position or any unauthorized disclosure or information, shall be cause for immediate discipline, including discharge. I understand that all questions of release of information are to be referred to a medical laboratory employee. Any time I am not sure of the proper action, I will withhold information until the release or question is resolved.*

## **Personal Hygiene and Dress Code Policies at the Clinical Site**

### **Basic Dress Code**

Scrubs (slate gray in color) are required for students at clinical sites. In addition, students must wear closed-toes, closed-heeled, water-resistant shoes at all times. Clinical sites will provide PPE for students during their clinical rotations, and students are expected to comply with their site's requirements for wearing PPE.

### **Personal Odors**

Do not wear perfume, strong scented creams, etc. Some people are allergic, and strong odors may exacerbate patient symptoms in a clinical setting. The student is responsible for maintaining good personal hygiene. If you have body odor and someone notifies your professor or preceptor, you will be counseled by a faculty member.

### **Hair**

For safety reasons, hair must be pulled back and off the collar while in the laboratory at clinical sites.

### **Fingernails/Tattoos/Body Piercings**

Nails extending beyond the fingertips and acrylic or false nail applications are not permitted. This encourages the growth of bacteria and can potentially spread disease. When performing hand washing, make sure to scrub beneath fingernails to remove dirt and debris that can increase the potential for bacteria.

Some clinical affiliates prohibit visible tattoos, body piercings, and unnatural hair colors while students are at their facilities. If students have tattoos, body piercings, and unnatural hair colors they are expected to comply with their clinical site's policies regarding coverage or removal. Tattoos may be covered with clothing or make-up.

## **Eye Makeup**

Eye makeup is discouraged due to the risk of contaminating microscope equipment.

## **Jewelry**

Earrings extending beyond the ear lobes are not allowed due to risk of becoming caught on equipment.

Long necklaces and dangling jewelry are not permitting for safety purposes during lab sessions.

Large rings should not be worn due to the fact that gloves could become damaged or torn.

## **Tobacco Use**

Smoking, including the use of simulated smoking devices such as electronic cigarettes, is not permitted at the clinical sites. This includes the parking lots. Smoking or using tobacco/nicotine related products at the clinical site will result in immediate dismissal from the MLT Program. Reentry will not be allowed.

## **CURRENT CLINICAL AFFILIATES AS OF 06/2023**

First Health of the Carolinas (multiple sites)

Scotland Memorial Hospital

Southeastern Medical Center

VAMC-Fayetteville (multiple sites)

Central Carolina Hospital

Pinehurst Medical Center

Chatham Hospital

Cape Fear Valley Health System (multiple sites)

Cheraw Medical Center

## SANDHILLS COMMUNITY COLLEGE HEALTH SCIENCES AND NURSING DEPARTMENTS DRUG SCREEN AND CRIMINAL BACKGROUND PROCEDURE

It is the procedure of Sandhills Community College Health Sciences and Nursing Departments to adhere to all policies of clinical agencies with which the College contractually affiliates for student clinical learning experiences. The majority of clinical agencies require a criminal background check and drug screening as recommended by their accrediting agency, TJC (The Joint Commission) and for other reasons as well; therefore, students admitted to programs with a clinical component are also required to complete an official criminal background check and drug screen to meet the requirements of the clinical agencies.

**Criminal Background Check:** Standards for criminal background screening are those commonly required of employees of hospitals. Criminal background checks must review a person's criminal history from the date of application. The check must include all cities, counties and states of known residence for a specified period.

**Drug Screening:** As related to drug screening results, refer to the SCC Compliance Statements, "Compliance with the Drug-Free Workplace Act and the Drug-Free Schools & Communities Act of 1988," in the Sandhills Community College Catalog.

**College Responsibilities:** The college will direct this process by identifying the company (CastleBranch) performing the check and screening. The Health Sciences and Nursing Departments will not approve the use of any other company. The criminal background check/drug screening company will provide the results to the clinical agencies in accordance with the contractual agreement.

The clinical agencies have the discretionary right to refuse any student having a criminal record and/or positive drug screen from receiving clinical training in their facility. This determination is made by each clinical agency without input from the college. The college will not be informed as to the nature of a student's ineligibility to participate in clinical training.

Individuals determined to be ineligible by any clinical agency will not be allowed to progress in any program within the Health Science and Nursing departments, since the student will be unable to successfully complete the required clinical objectives; consequently, the student will be unable to complete the required program of study. At this point, the student will be withdrawn from the program and will be directed to SCC Student Services for advisement regarding other programs of study.

**Student Responsibilities:** All students must sign a release of records in order for the clinical agency to review the documents. All students are responsible for the cost of the check and screenings at the time of the testing. Fees pertaining to the criminal background check and drug screening are subject to change.

Original Procedure Approval Date: 5/2/05

## MEDICAL LAB TECHNOLOGY IMMUNIZATION LIST

### Measles (Rubeola)

One of the following is required:

- 2 vaccinations
- A positive antibody titer for Measles (Rubeola) (lab report required).
- If any titer is negative or equivocal, a new alert will be created for you to receive 1 booster shot.

### Mumps

One of the following is required:

- 2 vaccinations
- A positive antibody titer for Mumps (lab report required).
- If any titer is negative or equivocal, a new alert will be created for you to receive 1 booster shot.

### Rubella

One of the following is required:

- 2 vaccinations
- A positive antibody titer for Rubella (lab report required).
- If any titer is negative or equivocal, a new alert will be created for you to receive 1 booster shot.

### Varicella (Chicken Pox)

One of the following is required:

- 2 vaccinations (given 4-8 weeks apart)
- A positive antibody titer (lab report required).
- If the titer is negative or equivocal, a new alert will be created for you to receive 1 booster shot.

### Hepatitis B

One of the following is required:

- 3 vaccinations
- a positive antibody titer (lab report required)
- declination waiver (available to download from this requirement)
- If the titer is negative or equivocal, a new alert will be created for you to receive 1 booster shot.

### TB Skin Test

One of the following is required:

- 2 step TB Skin test administered within past 6 months

**Two TB skin tests administered within the past 6 months. Do NOT have to be administered 1-3 weeks apart.**

- If positive test results, a chest x-ray is required.
  - If chest x-ray is positive, diagnosis must be confirmed with the County Health Department or private MD.
- The renewal date will be set for 1 year

Upon renewal, one of the following is required:

- 1-Step TB skin test
- TB questionnaire
- If previous chest x-ray was positive, a follow-up with County Health Department or private MD.
- **TB Questionnaire must be verified by healthcare provider.**

### Tetanus, Diphtheria, & Pertussis (TDaP)

One of the following is required:

- a completed DPT primary series **AND** a Tdap booster within the past 10 years OR
- a completed Td booster if the DPT primary series **AND** Tdap is more than 10 years old.

- Renewal date will be set at 10 years from date of the Tdap or the most recent Td booster, at which time a Td booster is required.
- **PLEASE NOTE:** Any adult with an incomplete or unknown primary series of tetanus, diphtheria, or pertussis vaccines should complete a series of three doses of tetanus-diphtheria containing vaccine, one dose of which (ideally the first) should be Tdap. The recommended interval between doses 1 and 2 is at least 4 weeks, and between doses 2 and 3 is 6-12 months
- Tdap instruction form is available to download from this requirement.

### **Influenza or Declination**

Select whether you are going to provide a flu shot during the current season OR a declination waiver. Flu declinations are clinical site-specific. New alerts will be created based on your response.

### **Flu Shot**

- You have indicated you are going to submit a flu shot to this requirement. Submit documentation of
- a flu shot administered during the current flu season.
- Flu shot can not be administered earlier than 8/1.
- If the administered date is between 8/1 and 10/31 the renewal date will be set for 1 year from the administered date of the vaccine.
- If the administered date is after 10/31 the renewal date will be set for 10/31 of the following flu season.
- **Documentation does not need to indicate that the vaccination you received is from a batch for the current flu season.**

### **Declination Waiver (Flu)**

- You have indicated you are going to submit a declination waiver.
- Flu declinations are clinical site-specific.
- YOU must see your school administrator for your proper declination form AND form MUST include a signed/written note from your Healthcare Provider stating the reason you cannot receive the flu vaccine.

### **COVID-19**

All clinical affiliates currently require students to be fully vaccinated against COVID-19. At minimum, one of the following is required:

- 2 doses of Moderna or Pfizer
- 1 dose of Johnson & Johnson

### **Code of Conduct**

- Please download and confirm receipt of the Code of Conduct for this requirement.

### **Physical Examination Allied**

- Do you have any specific medical conditions or special circumstances? If yes, you must submit your physical examination. If no, this requirement will be marked complete.

### **Health Science Student Medical Form**

- Please download, print and complete the 3 page Health Science Student Medical Form and upload to the requirement.

### **HIPAA/Confidentiality Statement & FirstHealth Orientation**

- Read and complete the online PowerPoint from FirstHealth, which is inclusive of patient confidentiality and HIPAA, as well as other valuable information. Upon completion, follow the online instructions to complete the survey; sign the and upload the document to CastleBranch that states you have completed the Orientation. Uploading this document constitutes giving it to your instructor and verifies that you understand and agree to respect patient confidentiality at all times.

## SANDHILLS COMMUNITY COLLEGE MLT TEACH OUT PLAN

- If the MLT program were to close, no more students would be accepted into the program.
- To reduce the potential for rumors, all current students and incoming advisees would be sent a letter documenting the closure plan and timeline.
- The college would maintain faculty until all the students have completed the program.
- If a course is not offered that a student needed the college would look to provide the course from another college partner.
- Currently enrolled students will be able to complete the MLT program.

## GENERAL LAB SAFETY

### Children in the Laboratory

Children are not permitted in the laboratory under any circumstances.

### On-campus Laboratory Dress Code

Since we will almost always be working with body fluid from human sources, we will use standard precautions, treating all body fluids as infectious. Students must wear gloves and fluid resistant lab coat at all times when biohazardous materials are part of the laboratory activity. Goggles or safety glasses will be worn to protect the eyes when the activity requires eye protection.

Scrubs are highly recommended, but not required when working in student labs. If scrubs are not chosen, in order to ensure safety, a student's clothing must fully cover their back, midriff and legs. Shoes for lab must be water-resistant, comfortable, low or no heels, and must be closed toe and closed heel.

If student spill body fluids or chemicals on themselves in the course of lab, they will be required to remove their clothing as an infection control measure. Students are highly encouraged to have a change of clothes with them. Students who do not have a change of clothes will be provided with a pair of scrubs to wear home and return.

### Use of Personal Devices

Students will not be permitted to use personal devices (phones, laptop, etc) in the student lab. This policy prevents student devices from becoming contaminated with blood, body fluids, or infectious cultures. In addition, it prevents distractions resulting from these devices that may pull students' focus away from their laboratory work and jeopardize safety. Exceptions may be made during labs that solely involve examination of fix slides.

### Tobacco Product Use

Tobacco use of any kind is not permitted in the lab or classroom. This includes smokeless tobacco, electronic cigarettes, and other simulated smoking devices. Sandhills Community College has designated areas for smoking; students are not permitted to smoke outside of these areas.

### Health Care Costs in Emergencies

The department of medical laboratory technology prefers that all students be covered by a health insurance policy before entry into the program. If students do not have their own policy or are not covered by the parent's policy, it is the student's responsibility to obtain insurance if not covered. In the event of an accident or accidental blood exposure, the student responsible for any costs incurred.



## Emergency Care While at the College or Clinical Site

Sandhills Community College is a commuter college and does not have on-site health care. Security personnel are trained in CPR/First Aid and are to be summoned if an emergency arises. The Moore County emergency squad is called if the student is in need. The MLT faculty may summon the Moore County Emergency Squad to assist the student. The student is responsible for any costs incurred, even if the student disagrees with the decision of the faculty to call the squad.

All students are referred to their primary care physician for health services.

When the student is at the Clinical affiliate for Clinical training, he/she will receive emergency care at the facility. NOTE: The student will be responsible for the cost of the care.

## Reporting Accidents

Students are required to report all accidents which occur at the college or clinical affiliates. Accident reports are initiated by the instructor of the laboratory or class in which the accident occurred.

If the accident occurs at the clinical site, the student should contact the MLT Clinical Coordinator as soon as possible to begin the reporting process. Student must also follow the Clinical Site policy for reporting the accident at the clinical site. Treatment will be given based on college or clinical affiliate guidelines.

Students and/or their family are responsible for any and all costs incurred.

An incident report form will be placed in the student file concerning any and all accidents during their time in the MLT program.

All students in the MLT Program are required to be covered by liability insurance. Students purchase, via an additional fee, liability insurance through the college automatically when enrolling in MLT-251 and MLT-140. Students not covered by liability insurance cannot attend laboratory sessions at the college or clinical facilities.

## Pregnancy

It is advised that pregnant students inform the Program Coordinator and instructors of their condition. This will allow program officials to advise the student of any additional health risks that may be present as a result of participating in the program. Communications of such a nature will be held in confidence.

## PHLEBOTOMY POLICY

Each student must perform venipuncture and skin puncture techniques beginning in the first semester, in MLT-110, Introduction to Medical Laboratory. Each student is expected to perform a minimum of 15 venipunctures before he/she is permitted to attend clinical rotations. A student must be proficient and confident of their phlebotomy skills before entering the phlebotomy clinical practicum (MLT-251).

IF A STUDENT REFUSES TO PERFORM THE REQUIRED PHLEBOTOMY DURING THE COURSE, THE STUDENT WILL RECEIVE A GRADE OF F FOR THE COURSE AND WILL NOT BE PERMITTED TO CONTINUE IN THE MLT PROGRAM. THERE WILL BE OPPORTUNITIES TO PERFORM PHLEBOTOMY DURING OTHER CLASSES, AS WELL AS IN CLINICAL TRAINING.

Fellow classmates are expected to volunteer to be the “patient” for the venipuncture and the skin puncture techniques. Students are not required to volunteer to be the “patient” and have the right to refuse to have blood drawn by venipuncture or by skin puncture. Students can inform the faculty privately and before class if they do not want to participate as a “patient”. Students refusing to participate as a “patient” should be aware they may not find a willing classmate for them to perform phlebotomy. It is the student’s responsibility to recruit practice patients.

The MLT Program prefers NOT to invite “patient” volunteers from outside the MLT program.

## GRIEVANCE POLICIES

Students must follow the procedures adopted by the college if they wish to make a grievance against a member of the MLT Program. Students can access the most current policies and procedures at:

<https://www.sandhills.edu/wp-content/uploads/2020/07/2020-2021-Catalog.pdf>

### Grievance with the MLT Program

Students who have a grievance with the program are expected to follow a “chain of command” at the college.

- Step 1: The student is required to write a letter of complaint to the MLT Program Coordinator, Aimi Vanden Oever. A private meeting will be scheduled to discuss the grievance.
- Step 2: If the student is not satisfied with the outcome, a meeting is scheduled with the Health Sciences Department Chair, Sue Senior.
- Step 3: The Dean of Instruction, Dr. Julie Voigt, is contacted at the time when all discussions are at impasse and considered unsatisfactory in the opinion of the student.
- Step 4: The student is then directed to contact the Vice President of Academic Affairs, Dr. Rebecca Roush.
- Step 5: Officially file a Grievance:

**Grievance** is defined as any matter of student concern or dissatisfaction within the control of the College, except for the following:

- grades, which shall be subject to the decision of the professor unless related to some type of suspected discrimination. Refer to the college’s non-discrimination statement on page 2;
- attendance policies and matters of a purely academic nature, which shall be adjudicated through the Dean of Instruction; some matters involving allegations of sexual harassment, which are addressed elsewhere in this Catalog and published online at [www.sandhills.edu](http://www.sandhills.edu);
- residency classification, which shall be subject to the residency appeal process outlined by the North Carolina Community College System and the State of North Carolina; and
- Financial Aid awards and eligibility, which shall be subject to review by the Financial Aid Appeals Committee with a final ruling by the Vice President of Student Services.

**Student Grievance Procedure** The purpose of the Student Grievance Procedure is to assure students of Sandhills Community College that their grievances will be considered fairly, rapidly, and in a non-threatening atmosphere. This process is designed to be used by students, not their surrogates. In keeping with the college practice of addressing all grievances informally prior to resorting to formal procedures, it is assumed that prior to embarking on the formal Student Grievance Procedure, students will initially address

problems and matters of concern informally with the faculty and/or staff members involved. However, the College recognizes that not all student grievances will be satisfactorily settled on an informal basis. Therefore, this Student Grievance Procedure has been adopted and applies to all appeals of disciplinary actions, appeals regarding student records and privacy rights. Appeals based on charges of discrimination will be handled by the Title IX coordinator in Human Resources. Students should follow these procedures first in all applicable situations. Any student electing initially to pursue a grievance outside of these procedures has thereby waived the ability to pursue his or her grievance hereunder. A complete copy of the Student Grievance Procedure may be obtained from the Dean of Student Services or Dean of Instruction. Student grievances resulting from academic practices or learning environment activities other than disruptive student behavior should be referred to the attention of the Dean of Instruction (curriculum students), Vice President for Continuing Education and Workforce Development (continuing education students), or Dean of the Hoke Center (Hoke Center students) after the student has met with the faculty member or department chair and attempted an informal resolution of the problem. Student grievances that affect an individual's welfare and are not directly related to academic or classroom activities of the College should be brought to the attention of the Dean of Student Services (curriculum students), Vice President for Continuing Education and Workforce Development (continuing education students), or Dean of the Hoke Center (Hoke Center students) after the student has made every effort to resolve the problem in an informal basis through conversation with the individuals involved.

#### **Student Grievance Procedure**

1. Informal Resolution: The student obtains the Student Grievance Form from the office of the Dean of Student Services or the Dean of Instruction. In non-academic disciplinary issues initiated by student, the informal grievance procedure begins with Section C of the Student Grievance Form. In academic disciplinary issues, the student must meet with the instructor and department chair in turn to seek an informal resolution. If a satisfactory informal resolution is achieved at any point, the grievance process stops. If an informal resolution is not achieved, the student grievance procedure continues to appropriate Vice President/Dean, who renders a decision within five (5) business days. The student may elect to continue the appeal in accordance with the following:
  - a. Curriculum students will proceed to Step 2 of the Student Grievance Procedure and appeal to the Student Grievance Committee.
  - b. Continuing education students may appeal within three (3) business days to the Vice President of Continuing Education and Workforce Development. A decision will be rendered in ten (10) business days. The decision of the Vice President of Continuing Education and Workforce Development is final.

Exceptions to the procedure include continuing education certificate programs: BLET and NA. These students should proceed in accordance with

2. Student Grievance Committee Hearing: The student submits the Student Grievance Form to the Student Grievance Committee Chair within three (3) business days of the Vice President's/Dean's decision. The Student Grievance Committee renders a decision within ten (10) business days. Following a discussion by the Student Grievance Committee, the student may elect to

continue the appeal to Step 3. (The Student Grievance Committee may choose to discontinue a hearing if the student fails to attend two or more scheduled meetings.)

3. **President's Review:** The student submits a written request for review to the college President within three (3) business days after the Student Grievance Committee's decision. The President renders a decision within ten (10) business days. The President's decision will be final.
- **Step 6:** When the student is followed steps 1-5 and remains dis-satisfied, he/she should write to the MLT Program's accrediting agency with their complaint. The student should also send a copy of the letter to the Program Coordinator.

NAACLS-National Accrediting Agency for Clinical Laboratory Sciences  
5600 N. River Rd  
Suite 720  
Rosemont, Illinois 66018-5119  
847-939-3597  
773-714-8886 (fax)  
[www.naacls.org](http://www.naacls.org)

## TIPS FOR SUCCESS

Here are a few suggestions I picked up on the internet as well as my own comments. Most of these seem so simple, but my experience is those students that fail academically did not follow these simple suggestions.

### Dedication of Time

**Rule of thumb:** For every lecture hour expect to spend another 2 to 3 hours in study activities. This is the minimum expected to be successful in your MLT courses.

### Prepare for Class

Never go to class unprepared. Too many students attend class with absolutely no preparation at all. It means that you could spend more of your time assimilating what the instructor was saying and less time taking notes on information that is already adequately covered in the textbook. Before arriving at class, you should:

- Read the objectives for the topics to be covered in class
- Complete reading assignment, paying special attention to the information in the objectives
- Read the lab manual for the labs to be performed in class
- Write down any questions you might want to ask in class

### Attend Every Class Meeting.

Professionals do not pick and choose the days they will go to work. Do not justify non-attendance with the usual cop-outs such as "the instructor doesn't say anything in class", or "it's all in the book", or "the lectures are so boring".

### Ask Questions

If you do not understand something in class, ask the question. Trust me: there are others that have the same question but are afraid to ask.

## Take Notes

Do not try to write down every word the instructor says. It is impossible to simultaneously listen to a lecture and transcribe it. Notes are not transcriptions; they are a few words, phrases, or simple drawings representing the major points and designed to jog your memory at some future date and enable you to recall the entire content.

## Read the Book

The instructor selected the textbook(s) to accompany the class. There is NO WAY all the material can be presented during the time the class is together at the college. To get the full benefit from the class, students MUST read the text. Students should have college-level reading skills.

## Study Effectively

Study early and often; **cramming does not lead to long-term retention**. Remember: the information learned in you MLT courses builds on itself, so you will need to remember it long term in order to continue to succeed. You will not be successful if you follow a pattern of cramming and purging information.

### **Reduce distractions while studying.**

- Find a quiet location away from TV, radio, children, etc.
- Put your cell phone away
- If using a computer, close all irrelevant windows

**Research has shown that you learn as much in 1.5 hours of uninterrupted studying as you do in 3 hours of distracted studying. It makes more sense to carve out shorter sessions of dedicated, uninterrupted time than longer sessions of distracted time. You'll spend total time studying and ACCOMPLISH MORE!**

**Interleave your studying.** This means you should vary the topic you are studying. For example, if you have exams coming up in two classes, instead of setting aside separate blocks of time to cram for each class, try to flip back and forth between than material every hour or so. This will actually make your studying feel MORE DIFFICULT, but research shows that you will REMEMBER IT BETTER.

**Spend the majority of your time practicing RECALL.** Students often give in to the temptation to just reread the textbook or rewrite their notes. What they don't realize it that EXPOSURE DOES NOT LEAD TO RETENTION. In order to really know that material, you need to practice taking it out of your memory and using it. Here are some ideas:

- Read part of your notes, then put them away and see how much you can summarize (either written or verbal) from memory. Check your summary against your notes when you are done to see how well you did.
- Make and use flash cards.
- Do practice questions.
- Teach/explain key concepts to classmates/friends/family

**Focus on concepts** rather than memorizing lists, charts, etc. Often, information in the chart can be deduced by learning the concepts that underlie it.

## Review Quizzes and Exams

Review the questions you got wrong. Make sure you understand **why** your answer was incorrect and what the correct answer was. If you do not understand, ask your instructor to explain it. **DO NOT BE SATISFIED WITH NOT KNOWING!** It is likely you will need to know this information again at some point in your MLT courses or in your career.

Reflect on how you prepared for the exam – were your methods effective? What will you do differently the next time?

## ACKNOWLEDGEMENT OF POLICIES

Please initial to acknowledge that you have read and agree with the policies of the MLT Program.

PRINTED NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

Student's initials

\_\_\_\_\_ I understand and agree to comply with the communicable disease policies (pertaining to COVID-19 and other pathogens) and procedures of both Sandhills Community College and my clinical site(s).

\_\_\_\_\_ I understand that I must maintain a minimum of a "C" average in all courses to continue in the MLT Program.

\_\_\_\_\_ As a student in the MLT Program my academic/cognitive performance will be evaluated as well as my affective (attitude) and my psychomotor (skills)

\_\_\_\_\_ I must have satisfactory performance in all three areas: academics, psychomotor, and affective. In the event that I am deficit in one area while passing the other two areas, I can be dropped from the program.

\_\_\_\_\_ Dishonesty in learning can result in being dropped from the program.

\_\_\_\_\_ I understand that the clinical site can request I be removed from the site. In this event, I may be dropped from the MLT Program.

\_\_\_\_\_ I understand that due to my educational potential exposure to blood or other infectious materials, I may be at risk of acquiring blood borne pathogen.

\_\_\_\_\_ I am aware that I risk potential exposure to body fluids potentially capable of transmitting diseases. I will receive training how to protect myself from exposure, and I am encouraged to receive the Hepatitis B vaccine series.

\_\_\_\_\_ I understand that I am required to take and pass a clinical entrance competency assessment to be permitted to enroll in clinical rotations.

\_\_\_\_\_ I understand if an instructor at the college or at the clinical site suspects that I am impaired, creating an unsafe environment to myself or others, I will be sent home and the Impaired Student Policy will be followed.

\_\_\_\_\_ I may be assigned to a site which is >75 miles from the college, and I will require reliable transportation. I understand that if sites are limited, the placement plan will be followed.

\_\_\_\_\_ I understand that I am responsible for all costs incurred for my own health care. I have read and understand the MLT department policy concerning accidents and health insurance.

\_\_\_\_\_ I understand my clinical site preceptor/designee and my future employer will request a copy of my immunizations and other training documents. It is my responsibility to keep a copy for this purpose. I will not request the MLT Program to make copies and/or fax and mail them for me.

\_\_\_\_\_ I waive my FERPA rights and permit my file to be examined for the purpose of Program Accreditation.

\_\_\_\_\_ As a part of the required training for the Medical Laboratory Technology program, I understand that venipuncture and finger puncture techniques will be performed on students by students or the MLT faculty. This training is done only under the direct supervision of the faculty for the Medical Laboratory Technology Program. In participating in this training experience, I release Sandhills Community College and the Medical Laboratory Technology faculty from any liability, injury or illness of any kind that could arise from this learning experience.

\_\_\_\_\_ I understand that I will enhance my employment opportunities by being flexible in my choices of place of employment and by being willing to seek employment outside of the immediate area.

\_\_\_\_\_ I understand that if I donate specimens for student laboratory testing, that the results from the testing of my specimen may be known to others in the classroom.

\_\_\_\_\_ I understand that if I donate specimens for student laboratory testing, that the results from the testing may be incorrect and may not be reliable for diagnostic purposes.

\_\_\_\_\_ I understand that I may not share the results from the student laboratory testing of student/instructor specimens with those persons who do not have a "need to know".

\_\_\_\_\_ I will not look at the personal papers, reports, grades, etc. belonging to other students.

\_\_\_\_\_ I will not look at the personal papers belonging to the instructors. These may include student work, student grades, quizzes, answers to quizzes, etc.

\_\_\_\_\_ I understand that there are disciplinary consequences to not complying with the above Confidentiality Policies and my grade can be affected.

\_\_\_\_\_ I understand that all patient information and test results must be maintained under strict confidentiality and that sharing patient information in an inappropriate manner can result in my dismissal from the MLT Program

\_\_\_\_\_ I understand that I am expected to read the textbooks and other class materials for comprehension. I should not rely on lecture and PowerPoint presentations alone.

\_\_\_\_\_ The Medical Laboratory Technology Program Director and/or the Clinical Coordinator have reviewed the information and policies in the *Medical Laboratory Technology Program Handbook* with me. As a Medical Laboratory Technology student, I accept the responsibility to abide by all policies as outlined in this handbook.

PRINTED NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_



APPENDIX A  
MLT Program Re-Admission Request Form



RE-ADMISSION REQUEST FORM (page 2)

DATA SINCE LEAVING MLT PROGRAM:

1. Course work completed - with grades.

2. Workload - hours/week at present.

RATIONALE FOR DESIRING RE-ADMISSION. Based on reasons for leaving program, why should you be allowed to re-enter at this time? State if any contributing pressures have been resolved or have changed.

DATA ON COURSE WORK TO BE COMPLETED:

1. Courses in the MLT Curriculum in addition to MLT courses yet to be completed are:

2. Workload to be carried if re-admitted - hours/week. Is it a necessity that you work?

# APPENDIX B

## MLT Attendance Probation Form

**Sandhills Community College  
Medical Laboratory Technology Program  
Student Attendance Probation Plan**

**General Information**

Student \_\_\_\_\_ Date \_\_\_\_\_

Course \_\_\_\_\_ Instructor \_\_\_\_\_

Total Course Hours \_\_\_\_\_ Hours Missed \_\_\_\_\_ Percent of Total \_\_\_\_\_

**Details of Absences/Tardiness**

Date	Tardy or Absence	Lecture or Lab	Excused or Unexcused	Hours Missed	Reason for Absence/Tardiness

Describe efforts that have been taken to make up missed work:

**Attendance Plan**

Use the table below to describe benchmarks relating to attendance that the student needs to meet to be successful in this course. These may include timelines for making up missed work and/or benchmarks for future attendance. Benchmarks should be clear and measurable and must include a target date.

	Benchmark	Target Date	Completion Date
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			
<b>5</b>			

## Consequences and Expectations

Provide a summary of any stipulations placed upon the attendance plan, consequences for insufficient effort or failure to meet the benchmarks, and any legal concerns, such as confidentiality as related to this document.

--

## Follow-up

The student and instructor shall meet at agreed upon timepoints to discuss progress toward the benchmarks laid out in this document.

### Follow-up Schedule

Date Scheduled	Activity	Conducted By	Date Completed

### Progress Tracking

Benchmark	Progress Notes
1	
2	
3	
4	
5	

## Signatures

By signing below, the student and instructor acknowledge that they have read and understood the information in this document.

Student Name	Student Signature	Date

Instructor Name	Instructor Signature	Date

***A copy of this document will be kept in the student's MLT Program student file.***

# APPENDIX C

## Evaluation Rubric Examples

## AFFECTIVE SKILLS RUBRIC EXAMPLE

For each category, students will receive rating based on the scale below:

Rating	Description
<b>Does not meet</b>	Displays frequent or egregiously ineffective behavior and does not sufficiently adjust behavior in response to feedback. Continuing this behavior may affect the student's future employability or ability to be successful in clinical rotations.
<b>Marginal</b>	Displays occasional ineffective behavior. Receptive to feedback and demonstrates progress toward meeting expectations.
<b>Meets</b>	Consistently displays effective behavior. On the rare occasions when their behavior falls below expectations, the student makes immediate adjustments in response to feedback.
<b>Exemplary</b>	Goes above and beyond expectations either in a single, extraordinary event or consistently throughout the semester.

Rating will be translated into grades based on these guidelines:

- All students start with 100 points. Point totals are adjusted based on the guidelines below.
  - Meets = no effect
  - Marginal = 8-point deduction
  - Does not meet = 20-point deduction
  - Exemplary = 10-point bonus

Category	Does not meet	Marginal	Meets	Exemplary
<b>Attitude</b>				
<b>Engagement</b>				
<b>Attendance</b>				
<b>Initiative</b>				
<b>Communication</b>				
<b>Respect</b>				
<b>Equanimity</b>				
<b>Maintenance</b>				
<b>Integrity</b>				
<b>Judgement</b>				



## GRADE CALCULATIONS

Rating	Total #	Multiplier	Points earned/lost	
Does not meet		-20	A	
Marginal		-8	B	
Meets		0	C	
Exemplary		10	D	

Starting Score	E	
Total Points earned/lost (Sum of A-D)	F	
FINAL Grade (E minus F)		

COMMENTS:

--

## TECHNICAL SKILLS RUBRIC EXAMPLE

### Slide Making Practical – MLT 120 Hematology/Hemostasis

You will be given 15 minutes to make peripheral blood smears. You will turn in your 5 best smears at the end of the 15 minute time period. Overall quality of the smears will be graded based on the rubric below. You will have the opportunity to repeat this examination up to twice more if you are not satisfied with your score.

	<b>1 – Beginning</b>	<b>2.5 - Developing</b>	<b>3.5 - Competent</b>	<b>4 - Advanced</b>
<b>Smooth uninterrupted film, thickest at the origin and gradually thinning out</b>				
<b>A good feathered edge; the film should fade away without a defined border</b>				
<b>Feathered edge runs straight across; not tongue shaped</b>				
<b>No tails or streaks beyond the feathered edge</b>				
<b>Films are ½ to ¾ the length of the slide</b>				

1 – Beginning: Students rated in as “beginning” have not demonstrated their ability to perform this skill. One or no slides meet this characteristic.

2 – Developing: Students rated as “developing” have demonstrated the skill, but have not yet done so consistently. Two or three slides meet this characteristic.

3 – Competent: Students rated as “competent” have demonstrated their ability to perform this skill with reasonable consistency (80% or more). Four slides meet this characteristic.

4 – Advanced: Students rated as “advanced” have demonstrated their ability to perform this skill with 100% consistency. All five slides meet this characteristic.

Students Score: \_\_\_\_/20      \_\_\_\_%

# CLINICAL ROTATION CHECKLIST EXAMPLE

## Clinical Rotation Evaluation – Coagulation

### INSTRUCTIONS TO THE EVALUATOR:

The attached list is to be used as a guide to clinical experiences and an evaluation tool. The student's grade will be derived in part from this evaluation.

Each student is assessed in three areas of ability:

**Affective:** growth in feelings or emotional areas (*Attitude*)

**Psychomotor:** manual or physical skills (*Skills*)

**Cognitive:** mental skills (*Knowledge*)

When evaluating a student on **affective elements**, please assign the number which best describes the student's behavior.

When evaluating a student on **cognitive and psychomotor elements**, place a check mark in the box that corresponds to the level of achievement attached for each procedure or behavior listed.

1. **Discussed:**  
You and the student discussed the principle and sample requirements. No actual testing occurred.
2. **Demonstrated:**  
You demonstrated a procedure, task, or calculation to the student.
3. **Practiced:**  
You allowed the student to perform a procedure, task, or calculation under your direct supervision
4. **Acceptable Performance with Moderate Supervision:**  
You allowed the student to perform a procedure task, or calculation with moderate supervision.  
The student asked questions during the process.
5. **Acceptable Performance with Minimum Supervision:**  
You allowed the student to perform a procedure task, or calculation with moderate supervision.  
The student asked a few questions during the process.
6. **Mastery:**  
You allowed the student to perform a procedure task, or calculation with moderate supervision.  
The student asked NO questions during the process. The student could verbally discuss the procedure, task, or calculation, anticipate challenges, and troubleshoot most problems. The student can successfully analyze data and correlate it to the patient's condition as well as the test environment. The student is also able to perform multiple procedures, tasks, or calculations simultaneously; i.e. multitask.

**PSYCHOMOTOR AND COGNITIVE\***

<b>Lab Operations</b>	<b>MINIMUM PASS LEVEL</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Perform laboratory clerical work, including keeping test logs, recording and results according to established laboratory protocol with 100% accuracy.	<b>5</b>						
Perform quality control procedures, identifying and acting upon unacceptable results according to established laboratory procedures.	<b>4</b>						
Perform preventative maintenance and/or quality control on the automated equipment.	<b>4</b>						
Determines specimen acceptability for requested testing	<b>5</b>						
Record temperatures of heating blocks, refrigerators, freezers, and other temperature dependent equipment	<b>4</b>						
Accurately performs laboratory clerical work, patient reports, and makes corrections as stated in the SOP	<b>6</b>						
Demonstrate the ability to select, wear, remove, decontaminate, and dispose of appropriate PPE	<b>2</b>						
Demonstrate the proper use of engineering and work practice controls; such as pipettors, splash guards	<b>2</b>						
Demonstrate the proper use of safety equipment such as the eye wash, fire extinguisher, etc.	<b>1</b>						
Discuss safety procedures and evacuation routes and responsibilities	<b>1</b>						

\*First page only – provided as an example

**Medical Laboratory Technology Program**

**Coagulation**

**NOTES TO EVALUATOR**

On the following page, mark the level of achievement you believe most accurately reflects the student's proficiency in each category based on the guidance below. The student's grade will be based in part on your evaluation.

- Students should not be penalized for lack of experience with procedures that are not performed at your site or for which there was not sufficient volume during their rotation. Likewise, ratings of Exceeds or Excels should be given based on the student's characteristics rather than the good fortune of seeing a high testing volume.
- Student performance should be evaluated with reference to the requirements outlined in the checklists rather than compared to the competency level of employees at your facility.

<b>LEVEL OF ACHIEVEMENT</b>	<b>DESCRIPTION</b>
<b>Does not meet requirements</b>	The student did NOT fulfill the minimum requirements of the clinical experience as outlined in the checklist.
<b>Meets requirements</b>	The student fulfilled the minimum requirements of the clinical experience as outlined in the checklist.
<b>Exceeds requirements</b>	The student's level of achievement went beyond the minimum requirements outlined in the checklist. Factors contributing to their ability to surpass the requirements could include but are not limited to their level of preparation, speed of skill/knowledge acquisition, retention of skills/knowledge, and speed of work.
<b>Excels</b>	While fulfilling the requirements of the clinical experience, the student demonstrated mastery of the skills/knowledge/behavior necessary for career entry in this department. Their performance exceeded the level expected from a student, although they may not have achieved employee-level competency.

**NOTE: Students must earn a minimum evaluation of "Meets Requirements" in each category in order to successfully pass this course. A rating of "Does not meet requirements" must include comments and recommendation for remediation that may include additional scheduled time in the rotation.**

## FINAL EVALUATION

Please initial the box indicating the student's level of achievement in each area based on guidance on Page 9.

Category	Does not meet	Meets	Exceeds	Excels
Professional Behavior				
Lab Operations/QC				
Technical Skills				
Cognitive Knowledge				
Troubleshooting Ability				

1. If you assigned an evaluation of "Does not meet requirements" in any category, please detail the areas of deficiency below and include any recommendations for remediation.
  
2. Any special commendations or comments?

Prepared by:		
Name	Signature	Date

Discussed with student by:		
Name	Signature	Date

By signing below, the student acknowledges this evaluation has been discussed with them. Signature does not imply agreement with the evaluation.

Student acknowledgement:		
Name	Signature	Date

Student Comments:

# APPENDIX D

## Phlebotomy Experience Verification Form

# PHLEBOTOMY EXPERIENCE VERIFICATION

**Purpose:** This form is required for all Medical Laboratory Technology students seeking Experiential Learning credit for MLT-252 or MLT-251 Clinical Practicum I.

## SECTION A: STUDENT ATTESTATION

Student Name:	Student ID #:

1. Using the check boxes below, indicate all route(s) by which your phlebotomy competency may be verified.

**ROUTE 1:** I hold a **current** phlebotomist certification from ASCP, AMT, ACA, AMCA, NCCT, or other recognized accreditor Yes  No

**ROUTE 2:** I have completed a phlebotomy training program at an accredited institution **within the last 5 years.** Yes  No

**ROUTE 3:** I have at least 12 months full time phlebotomy experience **within the last 5 years.** Yes  No

2. Attach or email documentation of at least one of the routes listed above. Required documentation for each route is listed below.

**ROUTE 1**

- Option 1: Copy of certificate.  Attached
- Option 2: For ASCP certification, Certification Verification must be emailed to the MLT Program Coordinator.  Emailed

**ROUTE 2**

- Copy of transcript indicating completion of the program.  Attached  Emailed

**ROUTE 3**

- Completed copy of the Section B of this form.  Attached  Emailed

3. Sign below indicating to attest that information is truthful to the best of your understanding.

Signature	Date

4. Return the completed form and documentation to the Program Coordinator.



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<b>Student Name:</b>	
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## SECTION B: EMPLOYMENT VERIFICATION

Please fill in the information requested regarding the student named above. This form may be sealed in the envelope provided and returned to the student or it may be emailed by the person completing the form to the MLT Program Coordinator, Aimi Vanden Oever ([vandenoevera@sandhills.edu](mailto:vandenoevera@sandhills.edu)).

Employer Name		Employer Address	
Employer Representative Name		Employer Representative Title	
Job title(s) of student while employed at your facility			
Employment Status	Full time <input type="checkbox"/>	Part time <input type="checkbox"/>	
Employment Dates			

<p>I attest that while employed at my facility, the student named above performed phlebotomy as part of their daily work:      Yes <input type="checkbox"/>      No <input type="checkbox"/></p>
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Signature	Date