Medical Laboratory Technology Program

Student Handbook

Sandhills Community College
2022-2023 Academic Year

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MEDICAL LABORATORY TECHNOLOGY PROGRAM: COVID-19 POLICIES

Due to the COVID-19 outbreak, this program may not be delivered exactly as described or in the time frame indicated on the SCC website and printed program information.

SCC Communicable Disease Policy

According to the Sandhills Community College General Catalog's (2019-2020) Student Services Communicable Disease policy:

> Any individual who knows or has a reasonable basis for believing that he or she is infected with a communicable disease (including but not limited to chickenpox, hepatitis, measles, Acquired Immune Deficiency Syndrome [AIDS], meningitis, mononucleosis, and whooping cough) has an obligation to protect himself or herself and others from the ramifications of the disease. Specifically, such individuals should report this information to the appropriate person (see below). Every effort will be made to try to keep the matter confidential. Only persons with a need to know will be informed and only with prior direct knowledge of the individual who is or believes he or she may be infected.
>
> Curriculum students should report a communicable disease condition to the Vice President of Student Services. Continuing Education students should report such conditions to the Vice President for Continuing Education and Workforce Development. The Director of Moore County Health Department will be immediately notified. At the Hoke Center, communicable disease conditions should be reported to the Dean of the Hoke Center who will then report them to the Vice President of Student Services and to the Hoke County Health Department.
>
> The appropriate Vice President will take necessary steps to ensure the medical safety of the student and the college community; if deemed necessary for the good of all, the student may be asked to remove himself or herself from the campus until a necessary evaluation of the condition is completed and the President of the College issues a final ruling concerning the enrollment status of the student.

As such, the Vice President of Student Services will notify the Moore County Health Department if a student or faculty member has been diagnosed with COVID-19. Upon notification, the health department will require an authorized representative of the college to communicate the diagnosis to any member of our college community, including those at our clinical affiliate sites, who may have been exposed to the infected individual. Due to HIPAA regulations, the college representative will not release the infected individual's name, but he/she will notify parties of interest of potential exposure.

Didactic Procedures

Some course lectures are being conducted in an on-line format. A student is required to check their SCC email daily and their Moodle courses at least three times per week for messages and updates. Attendance will be tracked through Moodle activity.

All course practical laboratories are planned to meet face-to-face on campus. The college has approved meeting of small groups for lab activities and testing on campus, as long as social distancing is still maintained. For lab activities and exams, students must attend all sessions, practice good hand hygiene, and maintain three feet of distance between each other at all times. Hand sanitizer will be provided, and handwashing encouraged. If a student is febrile, he/she will be asked to leave, and the lab or exam will be made up at a later date. Missed lab activities will be determined on a case by case basis.

If a student becomes infected with COVID-19, he/she may still attend course lecture sessions remotely, but he/she is not to come to campus for any reason. Exams and labs missed will be made up after he/she recovers from his/her illness. Documentation from a physician or other medical provider will be required as proof that absences are excused. If a faculty member becomes infected with COVID-19, another faculty member will step in to proctor exams and/or lead lab activities to ensure the continuity of student education during faculty illness.

Program faculty have made SCC Physical Plant employees aware of our scheduled on campus activities, so as to ensure that facilities used by MLT faculty and students are cleaned and disinfected. Additionally, SCC MLT Faculty will wipe down equipment, tables, chairs, etc. with disinfectant wipes between groups of students. Students will be encouraged to limit the contact between themselves, their personal items, and shared work areas. Students will be discouraged from sharing any items. Per SCC policy, students are also discouraged from loitering in common areas, and congregating in small groups that do not maintain social distance.

All students will review and return a signed copy of the MLT Program Guidelines for On Campus Students prior to engaging in on-campus laboratory or testing activities. Students who do not agree to the guidelines will not be permitted to engage in on-campus activities.

Clinical Procedures

Students are required to complete all additional COVID-19 training modules as required by clinical affiliate sites. These modules include additional training in hand hygiene, donning and doffing PPE, and infection control practices. Students are required to undergo the same screening process that all Page 4 of 59 clinical site visitors and employees are prior to entering the facility. Students are urged to wear their personal face masks when entering or exiting the facility and before a face mask is provided by the clinical site. Clinical site representatives have the right to refuse entry to any student who does not successfully pass their screening criteria. Additionally, students are encouraged to self-monitor their temperatures and/or general wellness for any changes after resuming clinical education experiences. While in the clinical affiliate site, students will practice social distancing and wear the face mask provided at all times. The only exception for the face mask is during the student's lunch break, when the mask may be removed for eating and drinking. However, during the lunch break, students should still adhere to social distancing recommendations to protect others in the clinical facility.

During the clinical rotation, schedules may be modified should any lab, college, state, or federal directives mandate changes in the ability of the clinical affiliate to provide student training.

If a student or SCC faculty member tests positive for COVID-19, they will notify their instructor/manager/preceptor and comply with the current policies at the college and the clinical site. Where differences exist between the college and the clinical site policies, students must follow whichever policy is more strict. Student who are not permitted on campus due to COVID-19 protocols may not attend their clinical rotations during the quarantine period even if the clinical site policies are less strict.

By arriving at their assigned clinical sites, students are agreeing to the following:

1. He/she does not have: a sore throat; new or worsening cough; runny nose or congestion; shortness of breath or difficulty breathing; the absence of a sense of smell or taste; nausea, vomiting, diarrhea, and/or abdominal pain; body aches or headaches; fatigue; and/or a fever or chills.

2. He/she: will wear a face mask at all times and maintain an appropriate social distance; has successfully completed the COVID-19 training modules; will comply with health screening and temperature checks at the facility; will report any suspected exposure to COVID-19; and will report any symptoms related to COVID-19 and self-quarantine as outlined above.

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 COMPENTENCIES 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 postanalytic 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 (AMEICAN 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 RESULSTS

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. COMPTENCY 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.

SUBTEST	**MLT**
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. Ii
  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^+ ion concentration
      c. CO_2 and O_2 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_2, bicarbonate
      b. Calcium, magnesium, phosphorus, iron, TIBC
      c. Trace elements
      d. Normal and abnormal states
   2. Test procedures
      a. Principles
      b. Special precautions, specimen collection and processing, troubleshooting, and interfering substances
   3. Calculations (osmolality, anion gap)
   4. Test result correlation
   5. Disease state correlation

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, betahemolytic 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. A student is required to complete semester ONE courses before they can proceed to semester TWO MLT courses and so forth. An applicant is encouraged to complete one or more general education courses while waiting for the cohort to begin. The curriculum is outlined here:

Fall: Semester ONE

- MLT-110 Introduction and Phlebotomy
- MLT-126 Immunology/Serology
- MLT-140 Introduction to Microbiology
- General Education Requirements, if not already completed:
    - ACA-115
    - MAT-143
    - MED-120
    - CHM-130/130A

Spring: Semester TWO

- MLT-120 Hematology/Hemostasis
- MLT-130 Clinical Chemistry
- MLT-240 Special Clinical Microbiology
- General Education Requirements, if not already completed:
    - BIO-163
    - ENG-111

Summer: Semester THREE

- MLT-127 Transfusion Medicine
- MLT-111 Urinalysis and Body Fluids
- General Education Requirements, if not already completed:
    - Humanities or Fine Arts Elective

Fall: Semester FOUR

- MLT-252 Clinical Practicum 1: Phlebotomy
- Two Other Clinical Rotations (5 credit hours each)
    - MLT-255 Hematology, Urinalysis and Hemostasis
    - MLT-265 Clinical Chemistry
    - MLT-275 Immunohematology and Serology
    - MLT-288 Microbiology
- General Education Requirements, if not already completed:
    - Social or Behavioral Science Elective

Spring: Semester FIVE

- MLT-215: Capstone, Professional Issues
- Two Other Clinical Rotations (5 credit hours each)
    - MLT-255 Hematology, Urinalysis and Hemostasis
    - MLT-265 Clinical Chemistry
    - MLT-275 Immunohematology and Serology
    - MLT-288 Microbiology
- General Education Requirements, if not already completed:
    - ENG-112 or ENG-114

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 conserve 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), 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%
F < 76.0%

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:

Weekly Quiz Average Score	minimum of 76%
Final Exam Score	minimum of 76%
Clinical Rotation Evaluations	minimum of 76%

A grade of no higher than "F" will be given to a students 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 – Proper Hand washing and 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
- MLT-120: Hematology –Make an acceptable peripheral blood smear and identify the 5 normal and mature leukocytes 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 on-campus instructor (and clinical instructor, 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 in marked on a student's attendance record any time in which the student in 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.
- **Excused Tardy/Absence**: Excused absences will only be approved for illness (your own or the illness of an individual under your care), inclement weather, or other important events that are out of your 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) will not ordinarily be excused. In order for an absence to be considered excused, you must:
    - Notify the instructor for your course (and your preceptor, if at a clinical site) as soon as you are aware you will be absent. If you miss several days in a row for the same event, you must notify the preceptor and your course instructor each day.
    - 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**
    - 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.

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.
e. **A 6 week clinical rotation with 240 hours:** A student will placed on probation if he/she misses 24 hours of clinical 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. Student will be dis-enrolled from the MLT Program when:

1. The cumulative GPA falls below 2.0
2. If a student receives a grade of < C in one MLT course
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 can NOT be repeated before the expected graduation date.
4. Student fails to successfully pass any CRITICAL Element in any MLT course.
5. Student fails to achieve a score of 76% of higher on the Passport Exam during Semester 3.

Passport Exam

The Passport Exam is distributed during semester 3 (summer session) in MLT111. The exam encompasses key information from all didactic MLT courses taken in semesters one through three. It is intended to ensure students have retained sufficient knowledge in each area in order to be successful in their clinical rotations. The student is required to pass the exam with a total score > 76% in order to progress into the clinical phase of instruction (semesters 4 and 5).

- If the student achieves an overall score of >76% but receives less then 76% in one or more subsections, the student will be required to complete a remediation assignment for each area of deficiency prior to beginning the rotation related to that section.
- If a student earns an overall score below 76%, they will have one opportunity to retake the exam.

Exit Exam

The Exit Exam is given at the conclusion of MLT215, which is taken in semester 5. The exam covers all MLT courses including clinical instruction. The exam questions are a higher level and required 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 MLT215.

OUT OF SEQUENCE – NOT COMPLETING MLT COURSES WITHIN 5 SEMESTER PLAN

Students are expected to complete the MLT Technical courses within two academic years. The new cohort begins each August at the beginning the Fall Semester and completes the Program the following year, at the end of the Spring semester, in May.

Occasionally a student needs to delay progress in the program. Students can be reinstated on a case by case basis, refer to the reinstatement policy below.

It is strongly recommended that the didactic courses be taken within one year (12 months) of beginning in the clinical phase of the program. This may mean that a student will be required to repeat a course previously taken and passed.

Out of sequence students may be required to demonstrate knowledge and skills before beginning the MLT Clinical Practicums in semesters 4 & 5. The MLT faculty will develop the method/process to demonstrate knowledge and skills. This may require a formal “challenge” to test out of the course or an independent study. Students must repeat the course if the challenge or independent study results in a failing grade

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

Students previously stopping out of the program are considered returning students such as:

1. Students who fail a MLT course and are waiting to repeat the course
2. Students who stop 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 resubmission request form to the Program Coordinator at least one month prior to his/her return to class. See example in Appendix A.
- 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.
- Students who elect to voluntarily withdraw from the MLT Program are not allowed reentry because seats are limited
- 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 newer results.

POLICIES FOR ASSIGNING CLINICAL SITE ROTATIONS

MLT faculty make the final decision for site assignments. It is not made based on distance to the site, work or childcare responsibilities.

Students must be prepared to travel up to 75 miles each way from the college to the clinical site. Money for fuel and a reliable car is required and paid by the student.

In the event there are not enough clinical sites, placements for the students ready to take Clinical Training, 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.
- OTHER STUDENTS IN THE MLT PROGRAM WILL NOT BE INCONVENIENCED BY CHANGING CLINICAL ASSIGNMENTS TO ACCOMMODATE A STUDENT WITH ANY TYPE OF ISSUE.

Placement is not determined by such factors as:

- Student does not have transportation
- Student must get children on bus at certain time
- Student has relative working at the clinical site
- Student is employed at the clinical site, etc.

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. On a case-by-case basis, the student may delay graduation for up to one year when another clinical affiliate is not immediately located and the cause of the rejection was not caused by the student's unprofessional behavior or technical deficiencies.

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 by May 1st of the second semester (Spring semester in year ONE)
B. Every student must submit to a drug screen and background check through Castle Branch.com. The registration, collection, and testing/resulting must be completed no later than May 1st of the second semester (Spring semester in year ONE). Specific directions and codes will be given to the student by the program director at the appropriate time.
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 or background check issue by June 1st of the first year, 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 training at the sites is M-F, 8 hours a day. 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 of 5:00 to 8:00 AM.

Service Work

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

CURRENT CLINICAL AFFILIATES AS OF 06/2022

First Health Moore Regional Hospital
First Health Richmond Memorial Hospital
Scotland Memorial Hospital
Southeastern Medical Center
VAMC-Fayetteville (multiple sites)
Harnett Health System
Central Carolina Hospital
Pinehurst Medical Center
Chatham Hospital
Cape Fear Valley Medical Center (multiple sites)
Cheraw Medical Center

SANDHILLS COMMUNITY COLLEGE HEALTH SCIENCS 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 he criminal background check and drug screening are subject to change.

Original Procedure Approval Date: 5/2/05
ProcedureRev: 05/19/2016perHelthSciencesandNursingDepartments

CB CastleBranch

Package review

Order Instructions for
Sandhills Community College - Medical Lab Technology (Invoice)

1. Go to https://mycb.castlebranch.com/
2. In the upper right hand corner, enter the Package Code that is below.

Package Code SN93im: Medical Document Manager

About

About CastleBranch

Sandhills Community College - Medical Lab Technology (Invoice) has partnered with CastleBranch, one of the top ten background check and compliance management companies in the nation to provide you a secure account to manage your time sensitive school and clinical requirements. After you complete the order process and create your account, you can log in to your account to monitor your order status, view your results, respond to alerts, and complete your requirements.

You will return to your account by logging into castlebranch.com and entering your username (email used during order placement) and your secure password.

Order Summary

Payment Information

No payment will be required to process your order.

Accessing Your Account

To access your account, log in using the email address you provided and the password you created during order placement. Your administrator will have their own secure portal to view your compliance status and results.

Contact Us

For additional assistance, please contact the Service Desk at 888-723-4263 or visit https://mycb.castlebranch.com/help for further information.

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, & Pertussus (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.

MLT PROGRAM: ACADEMIC PROLICIES AND PROCEDURES

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 effective behaviors that would indicates 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
Attitude	1. Students will follow classroom and laboratory policies without complaint. 2. Students will accept responsibility when they make mistakes and make efforts to correct their errors. 3. Students will apply feedback from instructors and preceptors to improve their knowledge, technique, or behavior.	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.
Engagement	4. Students will meaningfully contribute to class discussions. 5. Students will answer questions when called upon. 6. Students will put aside other interests while in class or clinicals.	Focuses on course material during class. Participates in class discussions and group activities.

Attendance	7. Students will value class and clinical time and make every effort to attend all scheduled class and clinical sessions. 8. Students will respect the instructor and their classmates' time by arriving to class on time. 9. Students will commit to attending the full class period	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.
Initiative	10. Students will prepare for class/clinicals by completing assignments and reviewing the lecture material ahead of class. 11. Students will recognize the importance of learning the course material to their future competence as professionals. 12. Students will proactively seek answers to their questions. 13. Students will proactively develop study resources.	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.
Communication	14. Students will use professional language and tone when communicating with instructors, preceptors, classmates, other healthcare professionals, and patients both verbally and in writing. 15. Students will communicate and respond to communication in a timely manner. 16. Students will answer questions from classmates, preceptors, and other healthcare professionals clearly and with a focus on patient care. 17. Student will listen carefully to verbal communication from instructors, preceptors, classmates, patients, and other healthcare professionals. 18. Students will carefully read emails, assignments, and procedures in order to fully understand them.	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.

Respect	19. Students will work effectively with their classmates, preceptors, instructors, and other healthcare professionals regardless of their professional and personal background. 20. Students will respect the dignity of patients and their families and caregivers. 21. Students will recognize the value of and scope of practice of other healthcare professionals. 22. Students demonstrates respect for their peers, instructors, and preceptors by maintaining a learning environment free from distractions and disruptive behavior.	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.
Equanimity	23. Students will adapt quickly to change. 24. Students will work effectively in a busy, noisy work environment. 25. Students will demonstrate patience with their classmates, instructors, coworkers, preceptors, patients, and other healthcare professionals. 26. Students will demonstrate resilience when they struggle with a skill or make a mistake. 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.	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.
Maintenance	28. Students will demonstrate respect for campus and clinical site equipment by handing it with care and keeping up with maintenance protocols. 29. Students will reduce waste by only using the resources they need and avoiding unnecessary repeat testing. 30. Students will demonstrate respect for their classmates and coworkers by keeping personal and communal laboratory workspaces clean and organized. 31. Students will recognize the impact of a clean and organized workspace on error reduction and patient outcomes.	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.

Integrity	32. Students will strive to produce high quality work, recognizing that their competence impacts patient care. 33. Students will recognize the impact of falsified results and hidden mistakes on patient safety. 34. Student will uphold the highest levels of academic integrity. 35. Students will maintain the confidentiality of patient data.	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.
Judgement	36. Students will only make decisions that are within their scope of practice. 37. Students will integrate information from multiple sources in order to think through complex problems. 38. Students will consider patient impact and other downstream effects when making decisions. 39. Students will seek advice from more experienced personnel when they encounter problems beyond their skill level.	Exercises good personal judgement. Recognizes the limitations of their knowledge and seeks assistance when necessary. Makes decisions that demonstrate critical thinking ability.

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 form 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 personalreasons.
    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.

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. An example is the instructor "spikes" the specimen for a laboratory procedure, such as adding a drug to a urine specimen.

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

GENERAL LAB SAFETY

Children in the Laboratory

Children are not permitted in the laboratory. The student with the child will be asked to leave class.

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 (slate gray in color) are highly recommended, but not required when working in student labs. If scrubs are not chosen, in order to ensure safety, a student must follow dress guidelines listed:

- Sufficient clothing should be worn to fully cover back, midriff and legs.
- Shoes for lab must be water-resistant, comfortable, low or no heels, and must be closed toe and closed heel

It is strongly recommended that students have a change of clothes at the college, should an accident occur and you cannot wear the clothes home as an infection control procedure.

Use of Personal Devices

Student 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.

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

It is realized that 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-252. Students not covered by liability insurance cannot attend laboratory sessions at the college or Directed Practice.

Pregnancy

It is advised that pregnancy 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.

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

Hair cannot be unnatural colors when training at the clinical site. For safety reasons, hair must be pulled back and off the collar for lab session.

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 cause 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 while students are at their facilities. If student have tattoos, they are expected to comply with their clinical site's policies regarding coverage. Coverage with clothing or make-up are acceptable methods of coverage.

All "visible" body piercings must be removed what at the clinical site with the exception of a single "post" ear piercing.

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.

PHLEBOTOMY POLICY

Each student must perform venipuncture and skin puncture techniques beginning in the first semester, in MLT-110, Introduction to Medical Laboratory. The in-class collection continues in semesters two and three on campus. Each student is expected to collect a minimum of 15 successful venipunctures before he/she is permitted to attend clinical rotations. A student must be proficient and confident of their phlebotomy skills before enters the clinical rotation Blood collection skills in semesters four and five, at the clinical site.

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 OPPORTUNITY 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;
  - 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

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

Find out exactly what part of your time is devoted to basic tasks. Prepare a chart in half-hour units. Record how you spend your time over a period of a week or two. Categories would include sleeping, eating, attending class, time spent in laboratories, workshops, and the library, studying.

Rule of thumb: For every class hour expect to spend another 2 to 3 hours in study activities.

For the MLT classes you are taking this fall semester: You should plan on 11-20 hours per week for the lecture and 6 hours per week in lab preparation. Crunch the numbers, and plan enough time to study 2-3 hours daily.

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 your 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 COVID19 and all other communicable disease directives and procedures

_____ 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 any 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 vaccine series.

_____ I understand that I am required to take and PASS the PASSPORT EXAM to be permitted to enroll in clinical rotations

_____ I understand that I am required to take and PASS the EXIT EXAM to qualify to graduate.

_____ 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, even though they are in a no secure mailbox.

_____ 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

Sandhills Community College

MEDICAL LABORATORY TECHNOLOGY
RE-ADMISSION REQUEST FORM

Student: _____

Address: _____

Phone: _____ Email: _____

Semester/Year last attended MLT classes: _____

Semester/Year desiring re-admission: _____

Student ID #: _____

DIRECTIONS: Complete this form and submit according to directions in Re-admission Procedure. WRITE LEGIBLY or type. Be concise and pertinent in your statements. Remember to include all relevant documentation as described in the Re-admission Procedure.

DATA ON LAST TERM ENROLLED IN MLT PROGRAM:

1. List courses being carried at that time.

2. Workload - previous hours/week and place of employment.

3. Other contributing pressures, e.g. health, family, personal. Describe briefly.

4. Statement of reason(s) for leaving MLT program - cite major source of difficulty.

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
1			
2			
3			
4			
5			

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
Does not meet	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.
Marginal	Displays occasional ineffective behavior. Receptive to feedback and demonstrates progress toward meeting expectations.
Meets	Consistently displays effective behavior. On the rare occasions when their behavior falls below expectations, the student makes immediate adjustments in response to feedback.
Exemplary	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
Attitude				
Engagement				
Attendance				
Initiative				
Communication				
Respect				
Equanimity				
Maintenance				
Integrity				
Judgement				

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.

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

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*

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

*First page only – provided as an example

Sandhills Community College

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.

LEVEL OF ACHIEVEMENT	DESCRIPTION
Does not meet requirements	The student did NOT fulfill the minimum requirements of the clinical experience as outlined in the checklist.
Meets requirements	The student fulfilled the minimum requirements of the clinical experience as outlined in the checklist.
Exceeds requirements	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.
Excels	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**

<u>Student Comments:</u>