

## **ACADEMIC AFFAIRS**

### **Mission Statement, Program Outcomes, and Assessment For Associate Degree in Medical Laboratory Technology**

**Mission Statement:** The mission of the Orangeburg-Calhoun Technical College Department of Medical Laboratory Technology is to provide a comprehensive education in the field of clinical laboratory science. We seek to provide our students with the skills and knowledge necessary to perform laboratory procedures in the highest standards of current practice. Our goal is for our graduates to serve their communities, patients, and employers by providing quality laboratory services which contribute to the prevention, diagnosis, and treatment of conditions and diseases.

**Program Outcomes:** The Orangeburg-Calhoun Technical College Medical Laboratory Technology Program utilizes the following indicators as expected outcome criteria.

Graduates will be able to recall, comprehend, analyze, synthesize, and evaluate clinical laboratory information, as required in the clinical laboratory.

Graduates will be able to demonstrate technical proficiency skills as required in the clinical laboratory.

Graduates will demonstrate professional behavior as expected by their employer.

Graduates will be prepared for entry-level positions within the clinical laboratory

## **MEDICAL LABORATORY TECHNOLOGY**

Graduates with a degree in Medical Laboratory Technology should be able to demonstrate knowledge and skills in the following areas:

- I. Perform Coagulation Procedures
  1. Explain Basic Hemostasis MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  2. Explain Coagulation Factors and Cascades MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  3. Perform & explain prothrombin time, partial thrombolastin time, ACT or heparin tests, INR & mixing studies, using manual & automated methods MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  4. Perform & explain fibrinogen deficiency tests MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  5. Perform & explain template bleeding time MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  6. Perform & explain fibrin degradation products & automated D-dimer MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  7. Explain bleeding tendencies & thrombosis MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  8. Explain diseases involving the coagulation mechanism MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  9. Explain platelet function tests/clot retraction MLT 210; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
- II. Perform Urinalysis and Body Fluids Procedures
  1. Perform & explain tests for physical & chemical properties of urine MLT 108; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  2. Perform & explain tests for microscopic elements MLT 108; MLT 251; MLT 252; MLT 240;
  3. Perform & explain clinitest, icotest MLT 108; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  4. Explain Bence Jones protein and turbidimetric measurements for protein MLT 108; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241
  5. Perform body fluid analysis for different types of fluids MLT 110; MLT 108; MLT 251; MLT 252; MLT 240; MLT 253; MLT 254; MLT 241

6. Perform & explain 24 hr. urine specimen collection/analysis MLT 108; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241

### III. Perform Hematology Procedures

1. Perform & explain white blood cell & red blood cell counts, using manual & automated methods MLT 110; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
2. Perform & explain micro-hematocrit & hemoglobin MLT 110; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
3. Perform & explain sedimentation rate & osmotic fragility test MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
4. Perform & explain reticulocyte, eosinophil & platelet counts MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
5. Explain & perform differential count, including normal & abnormal MLT 110; MLT 210; MLT 251; MLT 252;  
MLT 240; MLT 253; MLT 254; MLT 241
6. Explain theory of tests for lupus erythematosus cells MLT 115; MLT 210; MLT 251; MLT 252;  
MLT 240; MLT 253; MLT 254; MLT 241
7. Explain tests for malaria MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
8. Perform & explain sickle cell screening tests MLT 110; MLT 210; MLT 251; MLT 252;  
MLT 240; MLT 253; MLT 254; MLT 241
9. Explain flow cytometry MLT 110; MLT 210; MLT 251; MLT 252;  
MLT 240; MLT 253; MLT 254; MLT 241
10. Explain cythochemical stains MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
11. Explain diseases relating to hematologic abnormalities MLT 110; MLT 210; MLT 251; MLT 252;  
MLT 240; MLT 253; MLT 254; MLT 241
12. Explain collection of bone marrow aspiration MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241

### IV. Perform Blood Banking Procedures and Interpret

1. Perform & explain ABO and RH typing MLT 210; MLT 251; MLT 252; MLT 240;  
MLT 253; MLT 254; MLT 241
2. Perform & explain genotype MLT 210; MLT 251; MLT 252; MLT 240;

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| 3. Perform & explain direct & indirect antiglobulin test                        | MLT 253; MLT 254; MLT 241<br>MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241  |
| 4. Perform & explain basic transfusion procedures and protocols                 | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 5. Perform & explain haptoglobin antibody absorption                            | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 6. Explain RH immune globulin, fetal hemoglobin slides & antibody titration     | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 7. Explain donor selection  | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 8. Perform & explain cold auto antibody absorption                              | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 9. Perform & explain warm auto antibody absorption                              | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 10. Perform & explain elution procedures  | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 11. Perform & explain antibody identification procedures                        | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 12. Perform and/or explain preparation of blood components                      | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 13. Interpret test results as related to transfusion problems                   | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
| 14. Knowledge of gel card technology  | MLT 210; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                               |
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| V. Perform Chemistry & Special Chemistry Procedures on Blood & Body Fluids      |  |
| 1. Perform & explain glucose, including fasting & glucose tolerance             | MLT 110; MLT 130; MLT 108; MLT 230;<br>MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241 |
| 2. Perform & explain creatinine, including serum, urine, & creatinine clearance | MLT 130; MLT 108; MLT 230; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241          |

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| 3. Perform & explain uric acid & blood urea nitrogen  | MLT 130; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 4. Perform & explain total protein, prealbumin, globulin  | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 5. Perform & explain electrolytes   | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 6. Perform tests & explain calcium, phosphorus, & magnesium   | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 7. Perform test & explain lipids  | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 8. Perform test & explain amylase & lipase  | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 9. Perform & explain acid phosphatase & alkaline phosphatase  | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 10. Explain blood ammonia, G-6PD, serum iron, & plasma acetone  | MLT 130; MLT 108; MLT 230; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241 |
| 11. Explain relationship of iron, TIBC, & percent of saturation   | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 12. Explain urine 17 ketogenic, 17 keto steroids, VMA, D-xylose, drug screening & therapeutic drug monitoring | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 13. Perform & explain electrophoresis, including hemoglobin, protein & lipoprotein                            | MLT 110; MLT 230; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241             |
| 14. Explain blood gases   | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 15. Perform thyroid test  | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 16. Explain sweat test, gastric analysis, L/S ratio, & PG   | MLT 130; MLT 230; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241             |
| 17. Explain tumor markers   | MLT 115; MLT 230; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241             |
| 18. Explain cardiac markers   | MLT 230; MLT 251; MLT 252; MLT 240;   |

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| 19. Explain homocysteine, & CRP/HS        | MLT 253; MLT 254; MLT 241<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 20. Perform liver tests                   | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                              |
| 21. Perform endocrinology tests           | MLT 115; MLT 230; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241                     |
| 22. Perform & explain SGOT/AST & SGPT/ALT | MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                              |

#### VI. Perform Microbiology Procedures

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| 1. Explain specimen collection, transport, processing & plating of cultures; e.g., <i>stool, throat, sputum, wound, urine tissue, blood, ear, eye &amp; body fluids</i>  | MLT 105; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 2. Prepare & interpret stains; i.e., <i>gram, india ink, calcoflour white, KOH, PAS, Kinyoun, auramine-rhodamine, modified AFB &amp; trichrome</i>   | MLT 105; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 3. Interpret bacterial cultures of sterile and non-sterile sources. Know indigenous flora for each body site   | MLT 105; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 4. Perform & explain schemes for organism identification (manual & automated). Explain difference between presumptive & definitive identification. Explain isolates source, gram stain, colonial morphology, growth requirement, & susceptibility. | MLT 105; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 5. Perform & interpret Kirby-Bauer diffusion, MIC, E-Test, Beta-Lactamase disk ESBL  | MLT 105; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 6. Perform fungal cultures   | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 7. Explain anaerobes cultures, including plating & interpreting  | MLT 105; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 8. Explain the infectious disease process & human pathogens  | MLT 105; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |

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| 9.  | Explain yeast identification schemes, bacteroides fragilis, prevotella, porphromonas, fusobacterium, clostridium perfringens, & peptostreptococcus                         | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 10. | Explain identification yeast molds to include germ tube test, macroscopic, microscopic presence of SPTA, miroconidia, macroconidia, athroconidia, color & phase conversion | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 11. | Perform mycobacterial cultures, differentiate M. tuberculosis (TB) from non-TB isolates  | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 12. | Perform DNA probe tests  | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 13. | Perform concentration procedures, permanent staining for ova & parasite exam   | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 14. | Perform wet prep exam of vaginal discharge   | BIO 112; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 15. | Explain molecular amplification technique, PCR   | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |

## VII. Explain Immunology Procedures

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| 1. | Perform serologic tests for syphilis   | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 2. | Explain immunofluorescent techniques; e.g., ANA  | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 3. | Perform & explain ASO & streptozyme  | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 4. | Perform & explain cold agglutinins, pregnancy tests, mono test, CRP & RA                     | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 5. | Explain principles of immunity, immunologic techniques & diseases related to serologic tests | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241                      |
| 6. | Explain principles of HIV & hepatitis testing  | MLT 110; MLT 115; MLT 205; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241 |
| 7. | Explain serologic tests for viral and fungal diseases  | MLT 115; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241             |
| 8. | Explain viral load   | MLT 115; MLT 251; MLT 252; MLT 240;   |

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| 9. Explain PCR, DNA recombinant, DNA probes & gene applications | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 240 |
| 10. Explain methods for detecting gene problems                 | MLT 115; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 240 |

VIII. Perform Parasitology Procedures

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| 1. Explain specimen collection & preparation | MLT 110; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 205; MLT 251; MLT 252 |
| 2. Analyze staining techniques for parasites | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 3. Identify protozoa                         | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 4. Identify helminthes                       | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |
| 5. Perform fecal occult blood tests          | MLT 110; MLT 108; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241 |
| 6. Perform antigen detection tests           | MLT 205; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241          |

IX. Explain & Utilize Instrumentation Techniques

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| 1. Explain & utilize spectrophotometry   | MLT 110; MLT 130; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241  |
| 2. Operate a centrifuge  | MLT 110; MLT 115; MLT 120; MLT 130;<br>MLT 210; MLT 108; MLT 230; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241 |
| 3. Explain flame photometry & ion-selective electrodes, atomic absorption photometry, nephelometry, fluorometry, & iontophoresis | MLT 130; MLT 230; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241  |
| 4. Explain RIA, FPIA, ELISA, & chemiluminescence   | MLT 115; MLT 130; MLT 230; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241  |
| 5. Explain blood gas instrumentation & pH meter  | MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241  |

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| 6. Utilize coagulation instrumentation: electromechanical & optical density   | MLT 110; MLT 130; MLT 230; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254<br>MLT 241   |
| 7. Utilize hematology instrumentation: electrical impedance, laser technology & flow cytometry                                    | MLT 110; MLT 115; MLT 210; MLT 251;<br>MLT 252; MLT 240; MLT 253; MLT 254;<br>MLT 241  |
| 8. Utilize microbiology auto instrumentation, i.e., <i>Microscan and Vitek</i>  | MLT 105; MLT 205; MLT 251; MLT 252;<br>MLT 240; MLT 253; MLT 254; MLT 241  |
| 9. Knowledge of theory behind analyzers   | MLT 105; MLT 110; MLT 115; MLT 130;<br>MLT 205; MLT 210; MLT 108; MLT 230;<br>MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241          |
| 10. Introduction to bar codes through media   | MLT 105; MLT 110; MLT 115; MLT 130;<br>MLT 205; MLT 210; MLT 108; MLT 230;<br>MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241          |
| XI. Lab Basics  |  |
| 1. Follow all safety rules & regulations  | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 2. Perform & interpret quality control procedures using real packages & supply proper documentation for out-of-control situations | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 3. Explain quality assurance/performance improvement  | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 4. Collect blood samples for designated tests   | BIO 112; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 251; MLT 252; MLT 253; MLT 254                               |

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| 5. Maintain professional certification | MLT 240; MLT 241   |
| XII. Multi-disciplinary skills         |  |
| 1. Practice point of care testing      | MLT 110; MLT 130; MLT 210; MLT 251;<br>MLT 252; MLT 253; MLT 254 |
| 2. Perform EKG                         | MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241          |
| 3. Perform vital signs                 | MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241          |
| 4. Perform patient assessment          | MLT 251; MLT 252; MLT 253; MLT 254                               |

**Professional Skills Outcomes:**

*This section should consist of the DACUM competencies regarding soft skills, general education, communication, problem solving or critical thinking and the course(s) where they are taught. We will complete the DACUM headings on the forms for each program, and faculty members can complete the courses where they are taught. This may require meeting with general education faculty.*

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| X. Communications                        |  |
| 1. Utilize basic grammar                 | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; ENG 101;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 2. Utilize proper composition techniques | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; ENG 101;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 3. Write technical reports               | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; ENG 101;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 4. Promote quality customer service      | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 230;<br>PSY 201; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |

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| 5. Display courtesy & show empathy for others (co-workers, patients & guests) | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 230;<br>MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; MLT 241          |
| 6. Present oral reports   | MLT 210; MLT 240; MLT 241  |
| 7. Perform computer operations  | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; CPT 170;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 8. Develop professional telephone techniques                                  | MLT 251; MLT 252; MLT 240; MLT 253;<br>MLT 254; LT 241   |

### XIII. Practice Professionalism

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| 1. Practice stress management  | MLT 110; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241   |
| 2. Respect cultural diversity  | MLT 110; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241   |
| 3. Develop team skills   | MLT 110; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241   |
| 4. Develop & practice work ethics; e.g., <i>dependability, trustworthiness</i> | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 5. Practice confidentiality  | MLT 105; MLT 110; MLT 115; MLT 120;<br>MLT 130; MLT 205; MLT 210; MLT 108;<br>MLT 230; MLT 251; MLT 252; MLT 240;<br>MLT 253; MLT 254; MLT 241 |
| 6. Practice continuing education   | MLT 110; MLT 240; MLT 241  |

## **Assessment Methods:**

### **Direct Student Learning Outcomes**

***A direct student learning outcome is one that measures a specific competency attainment. Evidence of student learning must involve a direct assessment of student levels of attainment. Examples of such evidence are capstone performances, third-party examinations, faculty-designed examinations, professional performances, Advisory recommendations, program analysis ,and certification examinations. A student learning outcome must not be construed with a behavioral outcome (indirect assessment).***

### **. Direct Learning**

- 1) Maintain or exceed the national pass rate on the Board of Registry Exam (ASCP).  
83% of 2004 graduates were successful on the ASCP Board of Registry. For the past five years, the average percentage of students successfully completing the exam was 89.2%
- 2) Participate in clinical rotations in all major departments of the laboratory and complete the skills evaluation for each with a satisfactory grade of 75% or better.  
100% were successful in 2004
- 3) Master skills' competencies, lab and clinical assignments  
100% of students were successful
- 4) Successfully complete capstone courses (MLT 240 and MLT 241)  
100% of students enrolled in MLT 240 and MLT 241 received a grade of 75 or better.

### **Indirect Student Learning Outcomes**

***A behavioral outcome involves an indirect assessment of some form. Examples of such indirect measures are portfolios and work samples, job placement, follow-up of graduates, student and employer satisfaction surveys, retention, graduation rates, etc.***

### **Indirect Learning**

The Program faculty review the following indirect measures of student and program success yearly, or as needed, to ensure program viability: grade distribution and failure rates; student evaluations; job placement results; employer satisfaction survey; enrollment statistics; retention rates, and graduation rates.

### **Retention**

OCtech Benchmark #1 – The program will have retained in the following Fall semester not less than 60% of the new students who enrolled in the prior Fall semester.

- Over the last three years, program retention has been: 2002 (63.6%), 2003 (51.9%), and 2004 (66.7%).

### **Job Placement**

OCtech benchmark #2 – Using the State Technical College System definitions for employment, not less than 80% of the graduates of the program will have secured employment in the field.

- Over the part three years, job placement has been: 2001 (100%), 2002 (100%), and 2003 (100%)

### **Graduation Rates**

OCtech benchmark #3 – The number of graduates will average 25% of the average annual fall enrollment for the program.

- Over the past three years, graduation rates have been: 2001-2002 (37.5%), 2002-2003 (28.6%), and 2003-2004 (37.5%).

## **Internal Measures of Success**

### ***List Program Benchmarks.***

- 1) 95% of graduates will maintain or exceed the national pass rate on the Board of Registry Exam (ASCP).
- 2) Senior students will participate in clinical rotations in all major departments of the laboratory and complete the skills evaluation form for each rotation with a satisfactory grade of 90% or better.
- 3) Senior students will successfully complete capstone courses (MLT 240 and MLT 241) with a grade of 75% or better
- 4) 80% of freshman students will score 80% on didactic and introductory clinical lab skills

## **Indirect**

- 1) 100% of graduates seeking employment will become employed in the clinical laboratory within 6 months of graduation
- 2) 90% of employer surveys will indicate that graduates meet cognitive, psychomotor and affective entry level requirements for MLTs (Employer Satisfaction Survey to be implemented at the end of Spring Semester 2005).
- 3) 90% of the returned graduate surveys will score 4 or above on preparation for entry level requirements in the clinical laboratory (Graduate Survey to be implemented at the end of Spring semester 2005)
- 4) Retention rate of students will be maintained or improved from Fall semester to Spring semester
- 6) 50% of the students entering the MLT program will earn a degree

### **Review Process and Use of Results:**

***Describe review process and deliverables.***

Medical Laboratory Technology is a competency based curriculum which uses the DACUM profile and the Essentials (Standards) given by the National Accrediting Agency for Clinical laboratory Sciences to establish required competencies. The DACUM is reviewed annually at the Advisory Committee and is totally reevaluated every three years. The most recent DACUM was held in March 2002. The Program was reaccredited by NAACLS in 1998 for seven years.

- :
- Ensure that program outcomes are appropriate and current.
  - Ensure that program outcomes are addressed in the exit competencies of at least one required course.
  - Ensure that within those required courses that students demonstrate the desired program outcome either through written or performance-based tests and/or graded assignment.
  - Ensure that equipment and supplies are adequate for student practice
  - Ensure the budget is adequate to support the lab practice needs of the students
  - Ensure that successful completion of prerequisite courses is a satisfactory predictor of student success in subsequent courses..
  - Review grade distribution and failure rates; student evaluations; job placement results; employer satisfaction survey; enrollment statistics; retention rates, and graduation rates.
  - Ensure that the College Library can assure access to appropriate and current research materials.
  - Make a report to the advisory committee on assessment findings and solicit feedback.
  - Work with MLT faculty and Division Dean to revise syllabi and/or course/department offerings as needed.
  - Conduct program self study as required by accrediting agencies.
  - Implement the ACT Work Keys (Spring 2005) with students scoring a 5 or > in the areas of:
    - Reading for Information
    - Locating Information

## Applied Mathematics

### **What action(s) did the Program take this past academic year that improved and expanded student-learning outcomes?**

*List Data Source that prompted change, describe program enhancement, and future measurement of success. See example below:*

#### **Medical laboratory Technology Actions**

**Data source: MLT department faculty with input from clinical faculty, the Advisory committee and OCtech's Administration-**

MLT Senior skills' evaluation sheets were revised to reduce paper work.

MLT clinical evaluations were added to the skills sheet to allow the evaluator easy access to the tally and performance of skills by students

New evaluation form was implemented for MLT students to evaluate clinical faculty at the end of each clinical department rotation.

MLT freshmen assigned a Phlebotomy rotation before going to clinical.

Laboratory equipment for Hematology and Coagulation was upgraded or replaced during 2003-2004.  
Micro has been approved to receive a new automated Microscan instrument and Blood Bank has received 4 new heat blocks during 2004-2005.

Work Keys profiles were established for entry-level MLTs in Spring 2004 and will be administered to the graduating class of 2004.

Two MOCK Self Assessment Exams will be implemented Spring 2005 to increase and enhance the certification exam scores. (One of these exams became available for the first time during this year. The second one has a different format)