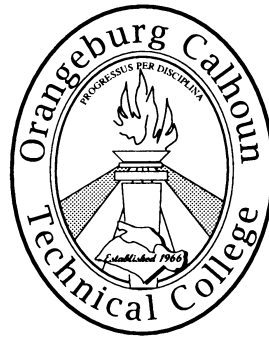


MEDICAL LABORATORY TECHNOLOGY

COMPETENCY PROFILE



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MEDICAL LABORATORY TECHNOLOGY COMPETENCY PROFILE

A Medical Laboratory Technician is a multi-tasked professional who collects and analyzes body substances to assist physicians with diagnoses.

A. PERFORM COAGULATION PROCEDURES	A-1 EXPLAIN BASIC HEMOSTASIS	A-2 EXPLAIN COAGULATION FACTORS AND CASCADES <i>e.g. genetic risk evaluation</i>	A-3 PERFORM & EXPLAIN PROTHROMBIN TIME, PARTIAL THROMBOLASTIN TIME, ACT OR HEPARIN TESTS, INR, & MIXING STUDIES, USING MANUAL & AUTOMATED METHODS
	A-4 PERFORM & EXPLAIN FIBRINOGEN DEFICIENCY TESTS	A-5 PERFORM & EXPLAIN TEMPLATE BLEEDING TIME	A-6 PERFORM & EXPLAIN FIBRIN DEGRADATION PRODUCTS & AUTOMATED D-DIMER
	A-7 EXPLAIN BLEEDING TENDENCIES & THROMBOSIS	A-8 EXPLAIN DISEASES INVOLVING THE COAGULATION MECHANISM	A-9 EXPLAIN PLATELET FUNCTION TESTS/ CLOT RETRACTION
B. PERFORM URINALYSIS AND BODY FLUIDS PROCEDURES	B-1 PERFORM & EXPLAIN TESTS FOR PHYSICAL & CHEMICAL PROPERTIES OF URINE	B-2 PERFORM & EXPLAIN TESTS FOR MICROSCOPIC ELEMENTS <i>e.g. cellular elements & crystals</i>	B-3 PERFORM & EXPLAIN CLINITEST, ICTOTEST
	B-4 EXPLAIN BENCE JONES PROTEIN AND TURBIDIMETRIC MEASUREMENTS FOR PROTEIN	B-5 PERFORM BODY FLUID ANALYSIS FOR DIFFERENT TYPES OF FLUIDS	B-6 PERFORM & EXPLAIN 24 HR. URINE SPECIMEN COLLECTION/ANALYSIS
C. PERFORM HEMATOLOGY PROCEDURES	C-1 PERFORM & EXPLAIN WHITE BLOOD CELL & RED BLOOD CELL COUNTS, USING MANUAL & AUTOMATED METHODS	C-2 PERFORM & EXPLAIN MICRO-HEMATOCRIT & HEMOGLOBIN	C-3 PERFORM & EXPLAIN SEDIMENTATION RATE & OSMOTIC FRAGILITY TEST
	C-4 PERFORM & EXPLAIN RETICULOCYTE, EOSINOPHIL & PLATELET COUNTS	C-5 EXPLAIN & PERFORM DIFFERENTIAL COUNT, INCLUDING NORMAL & ABNORMAL <i>e.g. WBC, RBC, & PLATELETS</i>	C-6 EXPLAIN THEORY OF TESTS FOR LUPUS ERYTHEMATOSUS CELLS
	C-7 EXPLAIN TESTS FOR MALARIA	C-8 PERFORM & EXPLAIN SICKLE CELL SCREENING TESTS	C-9 EXPLAIN FLOW CYTOMETRY
C. CONT. PERFORM HEMATOLOGY PROCEDURES	C-10 EXPLAIN CYTOCHEMICAL STAINS	C-11 EXPLAIN DISEASES RELATING TO HEMATOLOGIC ABNORMALITIES	C-12 EXPLAIN AND PARTICIPATE IN COLLECTION OF BONE MARROW ASPIRATION

D. PERFORM BLOOD BANKING PROCEDURES AND INTERPRET	D-1 PERFORM & EXPLAIN ABO AND RH TYPING	D-2 PERFORM & EXPLAIN GENOTYPE	D-3 PERFORM & EXPLAIN DIRECT & INDIRECT ANTIGLOBULIN TEST
	D-4 PERFORM & EXPLAIN BASIC TRANSFUSION PROCEDURES AND PROTOCOLS	D-5 PERFORM & EXPLAIN HAPTOGLOBIN ANTIBODY ABSORPTION	D-6 EXPLAIN RH IMMUNE GLOBULIN, FETAL HEMOGLOBIN SLIDES & ANTIBODY TITRATION
	D-7 EXPLAIN DONOR SELECTION	D-8 PERFORM & EXPLAIN COLD AUTO ANTIBODY ABSORPTION	D-9 PERFORM & EXPLAIN WARM AUTO ANTIBODY ABSORPTION
	D-10 PERFORM & EXPLAIN ELUTION PROCEDURES	D-11 PERFORM & EXPLAIN ANTIBODY IDENTIFICATION PROCEDURES	D-12 PERFORM AND/OR EXPLAIN PREPARATION OF BLOOD COMPONENTS
	D-13 INTERPRET TEST RESULTS AS RELATED TO TRANSFUSION PROBLEMS	D-14 KNOWLEDGE OF GEL CARD TECHNOLOGY	
E. PERFORM CHEMISTRY & SPECIAL CHEMISTRY PROCEDURES ON BLOOD & BODY FLUIDS	E-1 PERFORM & EXPLAIN GLUCOSE, INCLUDING FASTING & GLUCOSE TOLERANCE	E-2 PERFORM & EXPLAIN CREATININE, INCLUDING SERUM, URINE, & CREATININE CLEARANCE <i>e.g. glomerular filtration rate</i>	E-3 PERFORM & EXPLAIN URIC ACID & BLOOD UREA NITROGEN
	E-4 PERFORM & EXPLAIN TOTAL PROTEIN, PREALBUMIN, GLOBULIN	E-5 PERFORM & EXPLAIN ELECTROLYTES	E-6 PERFORM TESTS & EXPLAIN CALCIUM, PHOSPHORUS, & MAGNESIUM
	E-7 PERFORM TEST & EXPLAIN LIPIDS	E-8 PERFORM TEST & EXPLAIN AMYLASE & LIPASE	E-9 PERFORM & EXPLAIN ACID PHOSPHATASE & ALKALINE PHOSPHATASE
	E-10 EXPLAIN BLOOD AMMONIA, G-6PD, SERUM IRON, & PLASMA ACETONE	E-11 EXPLAIN RELATIONSHIP OF IRON, TIBC, & PERCENT OF SATURATION. <i>e.g. HEMOCHROMATOSIS</i>	E-12 EXPLAIN URINE 17 KETOGENIC, 17 KETO STEROIDS, VMA, D-XYLOSE, DRUG SCREENING & THERAPEUTIC DRUG MONITORING
	E-13 PERFORM & EXPLAIN ELECTROPHORESIS, INCLUDING HEMOGLOBIN, PROTEIN & LIPOPROTEIN	E-14 EXPLAIN BLOOD GASES	E-15 PERFORM THYROID TEST
E. CONT. PERFORM CHEMISTRY & SPECIAL CHEMISTRY	E-16 EXPLAIN SWEAT TEST, GASTRIC ANALYSIS, L/S RATIO, & PG	E-17 EXPLAIN TUMOR MARKERS	E-18 EXPLAIN CARDIAC MARKERS
	E-19 EXPLAIN HOMOCYSTEINE, & CRP/HS	E-20 PERFORM LIVER TESTS	E-21 PERFORM ENDOCRINOLOGY TESTS

PROCEDURES ON BLOOD & BODY FLUIDS	E-22 PERFORM & EXPLAIN SGOT/AST & SGPT/ALT		
F. PERFORM MICROBIOLOGY PROCEDURES	F-1 EXPLAIN SPECIMEN COLLECTION, TRANSPORT, PROCESSING & PLATING OF CULTURES; e.g.: <i>stool, throat, sputum, wound, urine, tissue, blood, ear, eye & body fluids</i>	F-2 PREPARE & INTERPRET STAINS; i.e., <i>gram, india ink, calcoflour white, KOH, PAS, Kinyoun, auramine-rhodamine, modified AFB & trichrome</i>	F-3 INTERPRET BACTERIAL CULTURES OF STERILE AND NON-STERILE SOURCES. KNOW INDIGENOUS FLORA FOR EACH BODY SITE
	F-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.	F-5 PERFORM & INTERPRET KIRBY-BAUER DIFFUSION, MIC, E-TEST, BETA-LACTAMASE DISK ESBL	F-6 PERFORM FUNGAL CULTURES
	F-7 EXPLAIN ANAEROBES CULTURES, INCLUDING PLATING & INTERPRETING	F-8 EXPLAIN THE INFECTIOUS DISEASE PROCESS & HUMAN PATHOGENS	F-9 EXPLAIN YEAST IDENTIFICATION SCHEMES, BACTEROIDES FRAGILIS, PREVOTELLA, PORPHROMONAS, FUSOBACTERIUM, CLOSTRIDIUM PERFRINGENS, & PEPTOSTREPTOCOCCUS
	F-10 EXPLAIN IDENTIFICATION YEAST MOLDS TO INCLUDE GERM TUBE TEST, MACROSCOPIC, MICROSCOPIC PRESENCE OF SPTA, MIROCONIDIA, MACROCONIDIA, ATHROCONIDIA, COLOR & PHASE CONVERSION	F-11 PERFORM MYCOBACTERIAL CULTURES, DIFFERENTIATE M. TUBERCULOSIS (TB) FROM NON-TB ISOLATES	F-12 EXPLAIN AND/OR PERFORM DNA PROBE TESTS
	F-13 PERFORM CONCENTRATION PROCEDURES, PERMANENT STAINING FOR OVA & PARASITE EXAM	F-14 PERFORM WET PREP EXAM OF VAGINAL DISCHARGE	F-15 EXPLAIN MOLECULAR AMPLIFICATION TECHNIQUE, PCR

G. EXPLAIN IMMUNOLOGY PROCEDURES	G-1 PERFORM SEROLOGIC TESTS FOR SYPHILIS	G-2 EXPLAIN IMMUNOFLUORESCENT TECHNIQUES; <i>e.g., AUTOIMMUNE DISORDERS</i>	G-3 PERFORM & EXPLAIN ASO & STREPTOZYME
	G-4 PERFORM & EXPLAIN COLD AGGLUTININS, PREGNANCY TESTS, MONO TEST, CRP & RA	G-5 EXPLAIN PRINCIPLES OF IMMUNITY, IMMUNOLOGIC TECHNIQUES & DISEASES RELATED TO SEROLOGIC TESTS	G-6 EXPLAIN PRINCIPLES OF HIV & HEPATITIS TESTING
	G-7 EXPLAIN SEROLOGIC TESTS FOR VIRAL AND FUNGAL DISEASES	G-8 EXPLAIN VIRAL LOAD	G-9 EXPLAIN PCR, DNA RECOMBINANT, DNA PROBES & GENE APPLICATIONS
	G-10 EXPLAIN METHODS FOR DETECTING GENE PROBLEMS		
H. PERFORM PARASITOLOGY PROCEDURES	H-1 EXPLAIN SPECIMEN COLLECTION & PREPARATION	H-2 ANALYZE STAINING TECHNIQUES FOR PARASITES	H-3 IDENTIFY PROTOZOA
	H-4 IDENTIFY HELMINTHS	H-5 PERFORM FECAL OCCULT BLOOD TESTS	H-6 PERFORM ANTIGEN DETECTION TESTS
I. EXPLAIN & UTILIZE INSTRUMENTATION TECHNIQUES	I-1 EXPLAIN & UTILIZE SPECTROPHOTOMETRY	I-2 OPERATE A CENTRIFUGE	I-3 EXPLAIN FLAME PHOTOMETRY & ION- SELECTIVE ELECTRODES, ATOMIC ABSORPTION PHOTOMETRY, NEPHELOMETRY, FLUOROMETRY, & IONTOPHORESIS
	I-4 EXPLAIN RIA, FPIA, ELISA, & CHEMILUMINESCENCE	I-5 EXPLAIN BLOOD GAS INSTRUMENTATION & pH METER	I-6 UTILIZE COAGULATION INSTRUMENTATION: ELECTROMECHANICAL & OPTICAL DENSITY
	I-7 UTILIZE HEMATOLOGY INSTRUMENTATION: ELECTRICAL IMPEDANCE, LASER TECHNOLOGY & FLOW CYTOMETRY	I-8 UTILIZE MICROBIOLOGY AUTO INSTRUMENTATION, <i>i.e., MICROSCAN AND VITEK</i>	I-9 KNOWLEDGE OF THEORY BEHIND ANALYZERS
	I-10 INTRODUCTION TO BAR CODES THROUGH MEDIA		

J. COMMUNICATIONS	J-1 UTILIZE BASIC GRAMMAR	J-2 UTILIZE PROPER COMPOSITION TECHNIQUES	J-3 WRITE TECHNICAL REPORTS
	J-4 PROMOTE QUALITY CUSTOMER SERVICE	J-5 DISPLAY COURTESY & SHOW EMPATHY FOR OTHERS (CO-WORKERS, PATIENTS & GUESTS)	J-6 PRESENT ORAL REPORTS
	J-7 PERFORM COMPUTER OPERATIONS	J-8. DEVELOP PROFESSIONAL TELEPHONE TECHNIQUES	
K. LAB BASICS	K-1 FOLLOW ALL SAFETY RULES & REGULATIONS	K-2 PERFORM & INTERPRET QUALITY CONTROL PROCEDURES USING REAL PACKAGES	K-3 SUPPLY PROPER DOCUMENTATION (CORRECTIVE ACTION DOCUMENTS) FOR OUT-OF-CONTROL SITUATIONS
	K-4 EXPLAIN QUALITY ASSURANCE/ PERFORMANCE IMPROVEMENT	K-5 * COLLECT BLOOD SAMPLES FOR DESIGNATED TESTS	K-6 MAINTAIN PROFESSIONAL CERTIFICATION
L. MULTI- DISCIPLINARY SKILLS	L-1 PRACTICE POINT OF CARE TESTING	L-2 PERFORM EKG	L-3 PERFORM VITAL SIGNS
	L-4 PERFORM PATIENT ASSESSMENT		
M. PRACTICE PROFESSIONALISM	M-1 PRACTICE STRESS MANAGEMENT	M-2 RESPECT CULTURAL DIVERSITY	M-3 DEVELOP TEAM SKILLS WITH ALL DEPARTMENTS
	M-4 DEVELOP & PRACTICE WORK ETHICS; <i>e.g., DEPENDABILITY; TRUSTWORTHINESS</i>	M-5 PRACTICE CONFIDENTIALITY	M-6 PARTICIPATE IN CONTINUING EDUCATION

* IDENTIFIES CRITICAL SKILLS.

THIS DACUM WAS CONDUCTED ON AUGUST 23, 2006, AT ORANGEBURG-CALHOUN TECHNICAL COLLEGE

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