

DEPARTMENT OF THE AIR FORCE
Headquarters US Air Force
Washington, DC 20330-1030

CFETP 4T0X1
Parts I and II
30 November 2013

AIR FORCE SPECIALTY CODE 4T0X1

MEDICAL LABORATORY



**CAREER FIELD
EDUCATION AND TRAINING PLAN**

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication.

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OPR: HAF/SG1E

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Supersedes: CFETP 4T0X1, 1 May 2007, and CFETP 4T0X1C1, 1 August 2009

Pages: 34

**CAREER FIELD EDUCATION AND TRAINING PLAN
MEDICAL LABORATORY SPECIALTY
AFSC 4T0X1**

PART I

Preface

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements, training support resources, and core task requirements for this specialty. The CFETP will provide personnel a clear career path to success and will instill rigor in all aspects of career field training. To read, review, or print a copy of the current CFETP, go to <http://www.e-publishing.af.mil>. **NOTE:** Civilians occupying associated positions may use Part II to support duty position qualification training.

2. The CFETP consists of two parts. Both parts are used by supervisors to plan, manage, and control training within the career field.

2.1. Part I provides information necessary for overall management of the specialty. Section A explains how everyone will use the plan. Section B identifies career field progression information, duties and responsibilities, training strategies, and career field path. Section C associates each skill level with specialty qualifications (knowledge, education, training, and other). Section D indicates resource constraints. Examples are funds, manpower, equipment, and facilities. Section E identifies transition training guide requirements for the ranks of SSgt through MSgt.

2.2. Part II provides training guidance for all skill levels. Section A identifies the Specialty Training Standard (STS) and includes duties, tasks, technical references to support training, Air Education and Training Command (AETC) conducted training, core tasks, and correspondence course requirements. Section B contains course objective information supervisors will use to determine if an Airman has satisfied training requirements. Section C identifies available support materials. An example is a Qualification Training Package (QTP). There are no QTPs required at this time for the medical laboratory specialty. Section D identifies a training course index supervisors can use to determine resources available to support training. Included here are both mandatory and optional courses. Section E identifies MAJCOM unique training requirements supervisors can use to determine additional training required for the associated qualification needs. Training for Air Reserve Component (ARC) personnel are identified in this section.

3. Using CFETP guidance ensures individuals in this specialty receive effective and efficient training at the appropriate career point. This plan enables us to train today's work force for tomorrow's jobs. At the unit level, supervisors and trainers use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

ABBREVIATIONS/TERMS EXPLAINED

Air Force Career Field Manager (AFCFM/CFM). Individual appointed by Head Quarters United States Air Force (HQ USAF) for an assigned Air Force Specialty (AFS). AFCFMs are responsible for the overall management of their assigned career field. In addition, the CFM is responsible for development, implementation and maintenance of the CFETP. **NOTE:** For purposes of this CFETP, from this point forward the interchangeable terms “AFCFM” or “CFM” refer to the 4T0XX AFCFM.

Air Force Job Qualification Standard/Command Job Qualification Standard (AFJQS/CJQS). A comprehensive task list that describes a particular job type or duty position. Used by supervisors to document task qualifications. Tasks on an AFJQS/CJQS are common to all persons serving in the described duty position.

Air Reserve Component (ARC). Air Force Reserve Command (AFRC) and Air National Guard (ANG)

Career Field Education and Training Plan (CFETP). CFETP is a comprehensive core training document that identifies life-cycle education and training requirements, training support resources, and minimum core task requirements for a specialty. The CFETP aims to give personnel a clear path and instill a sense of industry in career field training. It is the formal training contract between the AFCFM and AETC for formal accession and life-cycle skills training.

Continuation Training. Additional training exceeding requirements with emphasis on present or future duty assignments. Synonymous with proficiency training.

Core Task. Tasks that the AFCFM identifies as minimum qualification requirements within an AFSC, regardless of duty position. Core tasks may be specified for a particular skill level or in general across the AFSC. Guidance for completing core tasks is found in Part I, paragraph 5.2 (see note).

Course Objective List (COL). A publication, derived from the initial/advanced skills course training standard, identifying tasks and knowledge requirements, and respective standards provided, to achieve a 3-skill level in this career field. Supervisors use the COL to assist in conducting graduate evaluations in accordance with AFI 36-2201, *Air Force Training Program*.

Enlisted Specialty Training. A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade Airmen in each skill level of a specialty.

Expeditionary Medical Support (EMEDS). Operational medical support concept of an Air Force Theater Hospital. It is the health support piece of the Expeditionary Aerospace Force. EMEDS is modular, flexible, lean, state-of-the-art with capability that allows theater commanders to tailor medical support to best suit their needs. See AFI 41-106, *Medical Readiness Program Management*, for additional information.

Exportable Training. Additional training via computer, paper text, interactive video, or other necessary means to supplement training.

Go. In On-the-Job Training, the stage at which an individual has gained enough skill, knowledge, and experience to perform the tasks without supervision. (“Go” level equates to 3c in the STS proficiency code key.)

Instructional System Development. A deliberate and orderly, but flexible, process for planning, developing, implementing, and managing instructional systems. It ensures personnel are taught in a cost-efficient way the knowledge, skills, and attitudes essential for successful job performance.

Interactive Courseware (ICW). Computer controlled courseware that relies on student input to determine the pace, sequence and content of training delivery. ICW is also referred to as Computer Based Instruction and Computer Based Training. ICW can link and present a combination of media, including, but not limited to, programmed instruction, videotapes, slides, film, text, graphics, digital audio, animation and full motion video to enhance the learning process.

Initial Skills Training. A formal resident course that results in an AFSC 3-skill level award.

Major Command Functional Manager (MFM). MFMs are appointed field representatives who provide accurate, up-to-date information to enhance decisions made by the AFCFM. MFMs are command focal points providing guidance, information, and support within the command on enlisted issues. Additionally, MFMs advise MAJCOM Surgeons General on utilization of resources and personnel within their respective command.

Master Task Listing (MTL). Document maintained within a work center coded to identify all tasks performed for each duty position.

Master Training Plan (MTP). A comprehensive training plan for a work center. It must include the MTL, Qualification Training Package (QTP), AFJQS, task breakdowns, commercial publications, and any other document that supports training (as applicable).

No Go. Trainee has not gained enough skill, knowledge, and experience to perform task without supervision. Does not meet task standard.

Occupational Survey Report (OSR). A detailed report showing the results of an occupational survey of tasks performed within a particular AFS.

On-the-Job Training (OJT). Hands-on, “over-the-shoulder” training conducted to certify personnel in both upgrade (skill-level award) and job qualification (duty position certification) training.

Proficiency Training. Additional training, either in-residence or exportable advanced training courses, or OJT, provided to personnel to increase their skills and knowledge beyond the minimum required for upgrade.

Qualification Training (QT). Actual hands-on task performance training designed to qualify an individual in a specific duty position. This portion of the dual channel OJT program occurs both during and after the upgrade training process. It is designed to provide the performance skills required to do the job.

Qualification Training Package (QTP). An instructional package designed for use at the unit to qualify, or aid qualification, in a duty position or program, or on a piece of equipment. It may be printed, computer based, or in other audiovisual media.

Readiness Skills Verification Program (RSVP). A framework of recurring training tasks and skill sets, established by the AFCFM, to ensure adequate experience and training for those required skills, knowledge and proficiency in a deployed setting. (RSVP requirements can be located at the Knowledge Exchange Website at <https://kx.afms.mil>).

Resource Constraints. Resource deficiencies, such as money, facilities, time, manpower, and equipment, that preclude desired training from being delivered.

Skills Training. A formal course which results in the award of a skill level.

Specialty Training. A mix of formal training (technical school) and informal training (OJT) to qualify and upgrade Airmen in the award of a skill level.

Specialty Training Standard (STS). An Air Force publication that describes skills and knowledge levels that Airmen in a particular AFS need on the job. It further serves as a contract between AETC and the user to show the overall training requirements for an AFSC that the formal schools teach.

Standard. An exact value, a physical entity, or an abstract concept, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, establishing practices or procedures, or evaluating results. A fixed quantity or quality.

Task Certifier. A trained and qualified person that determines an individual's ability to perform a task to a required standard. See AFI 36-2201 for further details.

Total Force. All collective Air Force components (active, reserve, guard, and civilian elements) of the United States Air Force.

Trainer. A trained and qualified person who teaches Airmen to perform specific tasks through OJT methods. See AFI 36-2201 for further details.

Upgrade Training (UGT). Mandatory training which leads to attainment of a higher level of proficiency.

Utilization and Training Workshop (U&TW). A forum of MAJCOM Air Force Specialty Code (AFSC) functional managers, Subject Matter Experts (SMEs), and AETC training personnel that determines career ladder training requirements.

Wartime Course. Comprised of those tasks that must be taught when courses are accelerated in a wartime environment. Wartime tasks are the tasks to be taught in the 3-level course when the wartime courses have been activated. In response to a wartime scenario, directed by higher headquarters, these tasks will be taught in the 3-level course in a streamlined training environment. These tasks are only for those career fields that still need them applied to their schoolhouse tasks.

Section A - General Information

1. Purpose. This CFETP provides information necessary for the AFCFM, MFMs, commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training that 4TOX1 individuals should receive in order to develop and progress throughout their career. This plan identifies initial skills, upgrade, qualification, advanced, and proficiency training. Initial skills training is the AFS- specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. Normally, this training is conducted by AETC at technical training centers.

1.1. Upgrade Training (UGT). Identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 5-, 7- and 9-skill levels. QT is actual hands-on task performance training designed to qualify an Airman in a specific duty position. This training program occurs both during and after the UGT process. It is designed to provide the performance skills/knowledge required to do the job. Proficiency training is additional training, either in-residence or exportable advanced training courses, or OJT, provided to personnel to increase their skills and knowledge beyond the minimum required for upgrade. The CFETP has several purposes, some are:

1.1.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. Also, it helps supervisors identify training at the appropriate point in an individual's career.

1.1.2. Identifies task and knowledge training requirements for each skill level in the specialty and recommends education/training throughout each phase of an individual's career.

1.1.3. Lists training courses available, identifies sources of training, and the training delivery method.

1.1.4. Identifies major resource constraints that impact full implementation of the desired career field training process.

2. Uses. The plan will be used by MFMs and supervisors at all levels to ensure comprehensive and cohesive training programs are available for each individual in the specialty.

2.1. AETC training personnel will develop/revise formal resident, non-resident, field and exportable training based on requirements established by the users and documented in Part II of the CFETP. They also work with the AFCFM to develop acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MFMs ensure their training programs complement the CFETP mandatory initial, upgrade, and proficiency requirements. Identified requirements are satisfied by OJT, resident training, contract training, or exportable courses. MAJCOM-developed training to support this AFSC must be identified for inclusion into this CFETP.

2.3. Each individual will complete the mandatory training requirements specified in this plan. The list of courses in Part II will be used as a reference to support training.

3. Coordination and Approval. The AFCFM is the approval authority. Also, the AFCFM will initiate an annual review of this document to ensure currency and accuracy. MAJCOM

representatives and AETC training personnel identify and coordinate career field training requirements. Using the list of courses in Part II, they will eliminate duplicate training.

Section B - Career Progression and Information

4. Specialty Descriptions.

4.1. Medical Laboratory Superintendent/Chief Enlisted Manager (CEM).

4.1.1. Specialty Summary. Manages all medical laboratory activities in support of patient care, medical research, and military public health. Related DoD Occupational Subgroup: 131100

4.1.2. Duties and Responsibilities.

4.1.2.1. Plans and organizes laboratory activities. Composes local medical laboratory regulations. Advises superiors regarding status and adequacy of equipment, supplies, personnel training, and operating efficiency. Coordinates with other activities, agencies, and organizations.

4.1.2.2. Directs medical laboratory activities. Resolves problems about operating medical laboratory activities. Ensures supply and equipment availability. Applies continuous and effective internal quality control of all medical laboratory departments.

4.1.2.3. Inspects and evaluates medical laboratory activities. Inspects of medical laboratory activities. Furnishes deficiency reports and outstanding accomplishments to superiors. Interprets inspection findings and recommends corrective action. Supervises laboratory work area maintenance according to good laboratory techniques, taking precautions to maintain safe conditions for both hospital and laboratory personnel. Evaluates laboratory quality control program effectiveness.

4.1.2.4. Performs medical laboratory functions. Assists medical officers and allied scientists in research assignments in broad pathology field. Prepares tissue for electron microscopy. Directs toxicology procedures performance incident to aerospace pathology and forensic medicine programs. Assists biological warfare officer in developing procedures for detecting bacteriological agents incident to biological warfare.

4.2. Medical Laboratory Apprentice/Journeyman/Craftsman.

4.2.1. Specialty Summary. Tests and analyzes specimens of human origin and other substances by established scientific laboratory techniques to aid in diagnosing, treating, and preventing diseases or to support medical research; and supervises medical laboratory activities. Related DoD Occupational Subgroup: 131100.

4.2.2. Duties and Responsibilities.

4.2.2.1. Performs hematological tests and urinalysis. Accomplishes standardized qualitative and quantitative evaluation of erythrocytes, leukocytes, and thrombocytes. Examines stained blood smears microscopically and refers any abnormal cells to superiors. Performs coagulation studies on human blood and plasma. Performs chemical, macroscopic, and microscopic urine specimen examinations.

4.2.2.2. Performs chemical analysis. Analyzes human material or other products submitted to the laboratory, using photometric, calorimetric, titrimetric, radioisotope, or any other chemical or physical procedure applicable to clinical chemistry. Calibrates and maintains all instruments. Makes necessary calculations and reports data to superiors. Reviews all chemistry procedures to ensure current procedures are used.

4.2.2.3. Performs blood bank duties. Draws and processes blood aseptically by standardized techniques. Completely types donor and recipient blood, assists in cross matching blood to establish donor-recipient compatibility, reporting any abnormal reactions to immediate supervisor. Prepares blood derivatives. Accomplishes all techniques required for blood transfusion services.

4.2.2.4. Performs microbiological and serological tests. Conducts procedures to isolate and identify bacteria by gross and microscopic examination, staining, biochemical and immunological procedures, or any other determination of growth characteristics. Performs sensitivity tests on pathogenic bacteria. Assists in identifying viruses and fungi. Applies parasitological techniques to recover and identify parasites. Applies standard serologic tests for identifying antibodies specific to diseases.

4.2.2.5. Accomplishes general medical laboratory duties. Conducts bacteriological and chemical examination of food products, water, dairy products, and sewage incidental to preventive and veterinary medicine programs. Takes all necessary precautions to maintain safe conditions in laboratory for both laboratory and hospital personnel. Performs preventive maintenance procedures on laboratory equipment. Performs and evaluates laboratory quality control procedures. Prepares reagents for use in test performance.

4.2.2.6. Performs medical laboratory functions. Assists medical officers and allied scientists in research assignments in broad pathology field. Prepares tissue for electron microscopy. Directs toxicology procedures performance incident to aerospace pathology and forensic medicine programs. Assists in epidemiological investigations. Assists biological warfare officer in developing procedures for detecting bacteriological agents incident to biological warfare.

4.2.2.7. Plans, organizes, directs, coordinates, and evaluates medical laboratory activities (Craftsman and Journeyman only). Composes local medical laboratory regulations.. Applies continuous effective internal quality control of all medical laboratory departments. . Advises superiors regarding status and adequacy of equipment, supplies, personnel training, and operating efficiency. Coordinates with other activities, agencies, and organizations. Resolves problems about operating medical laboratory activities. . Inspects medical laboratory activities. Furnishes deficiency reports and outstanding accomplishments to superiors. Interprets inspection findings and recommends corrective actions.

5. Skill/Career Progression. Training and timely progression from apprentice to superintendent are important roles in the Air Force's ability to accomplish its mission. It is essential that everyone involved in training do his or her part to plan, manage, and conduct an effective training program. The guidance provided in this part of the CFETP will ensure each individual receives viable training at appropriate points in his/her career. The following narratives and the AFSC 4T0X1 career field charts and graphics in paragraph 10, define the training career path.

5.1. Apprentice 3-Skill Level. Initial skills training in this specialty consists of the tasks and knowledge training provided in the 3-skill level resident courses: Medical Laboratory Apprentice/ Phase I located at Medical Education and Training Campus (METC), Fort Sam Houston TX, and Medical Laboratory Apprentice/ Phase II conducted at designated medical treatment facilities (MTFs). The decision to train specific tasks and knowledge items in the initial skills courses is based on a review of OSR data, training requirements analysis data, and 4TOX1 SME input. Task and knowledge training requirements are identified in the STS in Part II, Section A of the CFETP. Individuals must complete **both** initial skills courses (Phase I and Phase II) to be awarded AFSC 4T031.

5.2. Journeyman 5-Skill Level. Upgrade training to the 5-skill level in this specialty consists of successfully completing: (1) all core tasks specified by an asterisk (*) in column 2 of the STS (see note below); (2) all STS tasks for the assigned duty position; and (3) Career Development Courses (CDC) 4T051A, 4T051B, and 4T051C. Once upgraded to the 5-skill level, a journeyman will maintain proficiency by completing all continuation training required or specified by command or local policies. SrA will attend Airman Leadership School after reaching 48 months total Air Force military service or after being selected for promotion to SSgt. Individuals will use their CDCs and other reference material listed in the Weighted Airman Promotion System (WAPS) catalog to prepare for the Specialty Knowledge Test (SKT) portion for promotion under WAPS. They should also consider continuing their education toward a CCAF degree in Medical Laboratory Technology and obtaining national certification as a Medical Laboratory Technician. Five-level journeymen are eligible for application and selection as an instructor for the Medical Laboratory Apprentice/Phase I and Phase II courses.

NOTE: All core tasks must be trained/certified by task performance, task knowledge, or subject knowledge. Only tasks (core and non-core) performed in the current duty position will be added to the duty task list (DTL) in AFTR; however, all core tasks must be trained/certified based on lab size and capability. In labs where practical [peer 1, 2, 3 (small/medium size)], all core tasks performed in the lab will be trained to the task performance level. Any core tasks not performed by the lab will be trained/certified to the subject knowledge (B) level. In large labs (peer 4 and 5 (hospital and medical center), only those core tasks performed in the assigned duty position must be trained/certified to the task performance level. All other core tasks can be trained/certified to the subject knowledge (B) level. There is no requirement to send personnel on temporary duty for core task training. Refer to AFI 36-2201, paragraphs 7.8.1. and 7.8.1.2. for more information regarding CFETP/AFJQS documentation requirements.

5.3. Craftsman 7-Skill Level. Upgrade training to the 7-skill level in this specialty consists of completing: (1) minimum 12 months upgrade training; (2) all STS tasks for the assigned duty position; and (3) CDCs 4T051A, 4T051B, and 4T051C **if not previously completed during 5-skill level UGT**. A laboratory craftsman can be expected to fill various supervisory and management positions within the laboratory such as noncommissioned officer in charge of the laboratory or a department. In addition, they may develop work schedules for subordinate personnel and ensure necessary manning levels are maintained at all times during hours of laboratory operations. Seven-levels should take courses or obtain added knowledge on management of resources and personnel. Continued academic education through CCAF and higher degree programs is encouraged.

5.4. Superintendent 9-Skill Level. To be awarded AFSC 4T090, an individual must be a SMSgt and meet any other requirement specified in AFI 36-2101, *Classifying Military Personnel (Officer*

and Enlisted). A 9-skill level can be expected to fill positions such as Superintendent of Laboratory Services or various staff positions within a medical group such as Squadron Superintendent. Additional training in the areas of budget, manpower, resources, and personnel management should be pursued through continuing education. Additional higher education and completion of courses related to their career AFSC are also recommended.

6. Duty Titles. Appropriate duty titles for personnel working in this specialty depend on rank, skill level, and/or actual duty position as specified on the unit manning document (UMD). Generally, 4T031 personnel will have the title, *Medical Laboratory Apprentice*; 4T051 personnel will have the title, *Medical Laboratory Journeyman*; and 4T071 personnel will have the title, *Medical Laboratory Craftsman*. In those instances where a noncommissioned officer is responsible for managing a distinct element of the laboratory (or the laboratory as a whole) with more than one staff personnel assigned, the title, *NCOIC, XXXX Element/Flight*, is appropriate. Additional use of the *NCOIC* title should be strictly limited. The *NCOIC* title is reserved exclusively for NCOs. The Assistant *NCOIC* title will not be used. The title *Superintendent* is used only by SMSgt, or MSgts filling a 4T090 position on the UMD. MSgts and below filling MSgt and below positions will NOT use the title *Superintendent*. CMSgt 4T000s may use the title, *Manager, XXXX Flight/Squadron*. A SMSgt 4T090 assigned to a CMSgt billet may also use the *Manager* title. 4T0XX personnel are restricted to one duty title; in instances where personnel hold two significant duties, the duty title should reflect the position more than 50% of the member's time is spent performing. For more guidance/information on appropriate use of duty titles, refer to AFI 36-2618, *The Enlisted Force Structure*, Chapter 7.

7. Training Decisions. The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the 4TOX1 career field. The spectrum includes a strategy for when, where, and how to meet training requirements. The strategy must be apparent and affordable to reduce training duplication and eliminate a disjointed training approach. The following training decisions were made during the AFSC 4TOX1 U&TW, held September 2013 at Fort Sam Houston, TX with follow-up coordination conducted by the AFCFM with MFM and AETC training personnel.

7.1. Initial Skills Training. The Medical Laboratory Apprentice course must meet the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) <<http://www.naacls.org/>> guidelines. The initial skills course provides Airmen the needed education, motivation, and training skills necessary to become 3-skill level apprentices.

7.2. 5-Skill Level Upgrade Requirements. Completion of CDCs 4T051A, 4T051B, and 4T051C are mandatory before the individual is eligible for upgrade to the 5-skill level. **NOTE:** Core tasks can be satisfied by the trainee either by demonstrating subject knowledge to the specified skill level or performing the actual procedure as outlined in paragraph 5.2 (see note). Subject knowledge levels are used alone when the task is not performed in the current duty position, and appropriate documentation is annotated on the AF Form 623A, **On-The-Job Training Record Continuation Sheet**.

7.3. 7-Skill Level Upgrade Requirements. Completion of CDCs 4T051A, 4T051B, and 4T051C (or previous edition), is mandatory if not already accomplished during 5-skill level UGT. Technicians must complete a minimum of 12 months in 7-skill level UGT and all tasks for the assigned duty position.

8. Enlisted Medical Badge. Although AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*, states the enlisted medical badge is an optional uniform item, it is strongly recommended. All 4T0X1 personnel authorized to wear the badge signifying their skill level do so proudly, identifying them as Air Force Medical Service professionals.

8.1. Basic Enlisted Medical Badge. Authorized for wear after award of the 3-skill level. It is highly encouraged that students graduating from Phase II technical training are awarded this initial badge as part of their graduation ceremony.

8.2. Senior Enlisted Medical Badge. Worn after award of the 7-skill level.

8.3. Master Enlisted Medical Badge. Authorized for wear by MSgts and above with 5 years in the specialty from award of the 7-skill level.

9. Community College of the Air Force (CCAF). Enrollment in CCAF automatically occurs upon completion of Basic Military Training (BMT). CCAF provides the opportunity to obtain an Associate in Applied Science Degree in Medical Laboratory Technology. Completion of initial skills training in the Medical Laboratory Apprentice Phase I and Phase II courses satisfies the technical education and the program elective requirements for a CCAF degree. Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an AETC Instructor must possess as a minimum an associate degree or should be actively pursuing an associate degree. Special Duty Assignment requires an AETC Instructor candidate to have a CCAF degree or be within one year of completion (45 semester hours [SH]). A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools (SACS).

NOTE: CCAF Degree required for enlisted performance report for senior rater endorsement.

9.1. Degree Requirements. Complete degree requirements can be found in the CCAF General Catalog located at: <http://www.au.af.mil/au/ccaf>. View newest catalog index under the publications heading, choose Degree Programs by Title and look for Medical Laboratory Technology (7GAF = CCAF code) degree program elements that match the candidates curriculum start date.

9.1.1. Technical Education (24 Semester Hours). A minimum of 12 semester hours of Technical Core subjects/courses must be applied and the remaining semester hours applied from Technical Core/Technical Elective subjects/courses.

9.1.2. Leadership, Management, and Military Studies (6 Semester Hours). Professional military education and/or civilian management courses. **Note:** Credits awarded from completion of the Medical Laboratory Craftsman course will not fulfill this requirement.

9.1.3. Physical Education (4 Semester Hours). The requirement is satisfied by the completion of BMT.

9.1.4. General Education (15 Semester Hours). Applicable courses must meet the criteria for application of courses to the General Education Requirements (GER), and be in agreement with the definitions of applicable General Education subjects/courses as provided in the CCAF General catalog.

9.1.5. Program Electives (15 Semester Hours). Satisfied with applicable Technical Education; Management and Military Studies; or General Education subject/courses, including natural science courses meeting GER application criteria. Six semester hours of CCAF degree applicable technical credits otherwise not applicable to this program may be applied. See the CCAF General Catalog for details regarding the Associate of Applied Science for this specialty.

9.2. Off-duty Education. Additional off-duty education is a personal choice and is *highly* encouraged. Individuals desiring to become an AETC Instructor should actively pursue an associate degree. Pursuing a degree is not required for career progression. A degreed faculty is necessary to maintain accreditation through SACS.

9.3. Occupational Instructor Certification. Upon completion of instructor qualification training, consisting of the instructor methods course and supervised practice teaching, CCAF instructors who possess an associate's degree or higher may be nominated by their school commander/commandant for certification as an occupational instructor.

9.4. Trade Skill Certification. When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The College uses a competency based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman/Supervisor, or Master Craftsman/Manager. All are transcribed on the CCAF transcript.

NOTE: Students who have completed both Medical Laboratory Apprentice Phase I and Phase II courses and desire certification (many offer additional specialization examinations) should contact the following agencies:

- ☆ American Society of Clinical Pathologists (ASCP), 1-800-621-4142, <http://www.ascp.org/bor>
- ☆ American Medical Technologists (AMT), 1-800-275-1268, <http://www.amt1.com>
- ☆ International Society for Clinical Laboratory Technology, (314) 241-1445
- ☆ American Association of Bioanalysts, (314) 241-1445, Fax: (314) 241-1449, <http://www.aab.org>
- ☆ National Credentialing Agency for Laboratory Personnel, Inc. (913) 438-5110, <http://www.nca-info.org>

The Air Force reimburses members for **one** certification examination session. Reference AFI 41-104, *Professional Boards and National Certification Examinations*, for detailed information regarding certification and recertification (if applicable) requirements and procedures.

☆ = **No Air Force or Federal endorsement of any organization is inferred, implied or intended**

10. Career Field Path. Charts depicting this specialty's career path are presented on the next two pages. The **Medical Laboratory (4T0X1) Enlisted Career Path** outlines when training is required for each skill level and function within this specialty. The **Enlisted Education and Training Path** presents education and training requirements, average sew-on time for stripes, and a chart representing earliest date of rank and high year of tenure (HYT) dates for ranks of SrA and above.

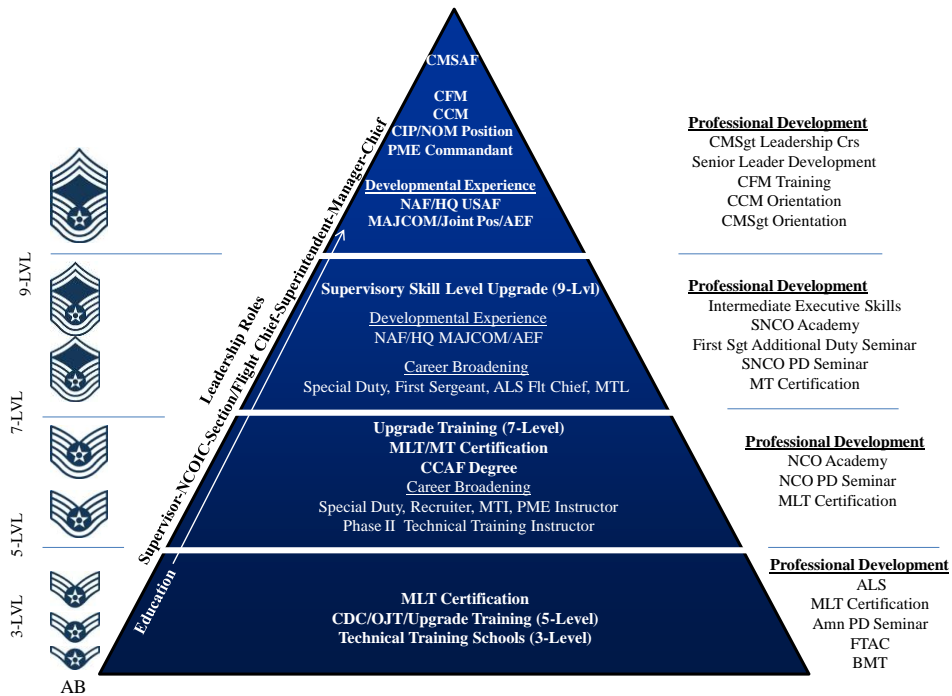
10.1. Medical Laboratory (4T0X1) Enlisted Career Path.

Enlisted Promotion, Education and Training Path				
Education and Training Requirements	GRADE REQUIREMENTS			
	Rank	Average Sew-on *	Earliest Sew-on	HYT**
BMT	AB			
Upgrade To Apprentice (3-Skill Level) Technical Schools - Medical Laboratory Apprentice Course/Phase I - Medical Laboratory Apprentice Course/Phase II	Amn A1C	6 months 16 months		
Senior Airman Below-the-Zone Promotion - Promotion Board for all eligible airmen - To be eligible, must have 28 months TIG or 36 months TIS w/20 months TIG & proper skill level	A1C	Awarded only to 15% of eligible A1C's	6 months before Fully Qualified	
Upgrade To Journeyman (5-Skill Level) - Minimum 12 months in UGT - Complete CDCs 4T051A, 4T051B, and 4T051C	SrA	3 years	28 months	8 years
ALS - Must be a SrA with ≥ 48 months time in service or be a SSgt select - Resident graduation is a prerequisite for SSgt sew-on (active duty only)	Trainer - Must complete Air Force Training Course - Must have supervisors recommendation; possess the same AFSC at a higher skill level than the trainee; be task qualified			
Upgrade To Craftsman (7-Skill Level) - Minimum rank of SSgt - 12 months UGT - Completion of all tasks for assigned duties - Complete 5-skill level CDCs (if not previously done) - Must be a 7-skill level to sew on TSgt	SSgt	4 years	3 years	15 years
Certifier Position Requirements - At least a SSgt w/ 5 skill-level or civilian equivalent capable of task evaluation	Certifier - Completed Air Force Training Course - Be a person other than the trainer			
Noncommissioned Officer Academy (NCOA) - Must be a TSgt or TSgt select - Resident graduation is a prerequisite for MSgt sew-on (active duty only)	TSgt MSgt	10 years 16 years	5 years 8 years	20 years 24 years
USAF Senior NCO Academy (SNCOA) - Must be a SMSgt, SMSgt select, or a MSgt selected to attend (active duty only) - Resident graduation is a prerequisite for SMSgt sew-on (active duty only) Upgrade To Superintendent (9-Skill Level) - Minimum rank of SMSgt - In-residence SNCOA graduation required for promotion to SMSgt (active Duty only)	SMSgt	20 years	11 years	26 years
Upgrade To Chief Enlisted Manager (4T000)	CMSgt	23 years	14 years	30 years

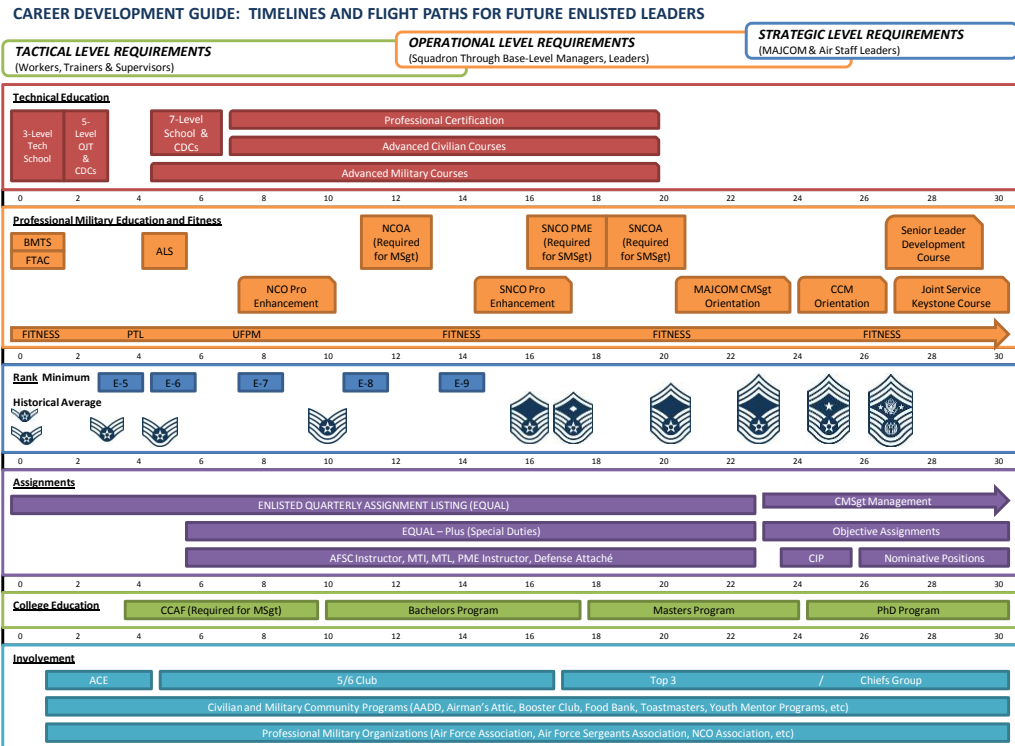
* Based on average TIS, per grade, for promotion cycles 2012-2013, 4T0X1 selects only

** May extend for up to 2 extra years if allowable under periodic personnel programs (contact local MPF for more information)

10.2. Enlisted Career Path.



10.3. Career Development Guide: Timelines and Flight Paths for Future Leaders.



Section C - Proficiency and Skill Level Training Requirements

11. Purpose. Skill level training requirements in this career field are defined in terms of task and knowledge requirements. This section outlines the specialty qualification requirements for each skill level in broad, general terms and establishes the mandatory requirements for entry, award and retention of each skill level. The specific task and knowledge training requirements are identified in the STS at Part II, Sections A and B, of this CFETP.

12. Apprentice (3-skill)/Journeyman (5-skill)/Craftsman (7-skill) Level Training:

12.1. Specialty Qualifications Requirements:

12.1.1. Knowledge. Knowledge is mandatory of hematology, urinalysis, clinical chemistry, microbiology, blood banking, immunology, medical terminology, medical ethics applicable to performing medical laboratory procedures, medical laboratory management and medical administrative principles, pathology and histopathology fundamentals, and routine equipment maintenance.

12.1.2. Education. For entry into this specialty, completion of high school courses in algebra and chemistry are mandatory. Completion of high school courses in biology, zoology, and other basic science is desirable.

12.1.3. Training. For award of AFSC 4T031, completion of the basic medical laboratory course is mandatory.

12.1.4. Experience. The following experience is mandatory for award of the AFSC indicated:

12.1.4.1. 4T051. Qualification and in possession of AFSC 4T031. Also, experience in performing functions in urinalysis, hematology, bacteriology, serology, and chemistry.

12.1.4.2. 4T071. Qualification in and possession of AFSC 4T051. Also, experience performing or supervising functions such as work normally performed in a routine clinical laboratory (class A dispensary or hospital); specialty performance of tests or technical supervisory experience in clinical chemistry, bacteriology, toxicology, or virology at class A, class B, or analogous laboratory; or combination of foregoing types of experience.

12.1.5. Other. For entry into this specialty, normal color vision, as defined in AFI 48-123, *Medical Examination and Standards*, is mandatory. Additional entry requirements can be found in the most current *Air Force Enlisted Classification Directory* (AFECD).

12.2. Training Sources/Resources. For AFSC 4T031, completion of Medical Laboratory Apprentice/Phase I course (L3AQJ4T031 01AA) and Medical Laboratory Apprentice/Phase II course (L5ABO4T031 02AB) satisfies the knowledge and training requirements specified in the specialty qualification section.

12.3. Implementation. Entry into AFSC 4T031, initial skills training, is accomplished by pipeline students from basic training or by approved retraining from any AFSC.

13. Journeyman Level Training (5-skill level):

13.1. Specialty Qualifications. All 4T031 qualifications apply for the 4T051 requirements.

13.1.1. Knowledge. In addition to the knowledge required for a 3-level, the following subjects are mandatory: increased knowledge of safety and health hazards; professional conduct; routine equipment maintenance; general management principles; general laboratory cleanliness; and increased knowledge of principles and procedures in the areas of hematology, clinical chemistry, urinalysis, microbiology, parasitology, blood banking, immunology, and specimen collection, processing, and shipment.

13.1.2. Education. N/A

13.1.3. Training. Successful completion of Career Development Courses 4T051A, 4T051B, and 4T051C.

13.1.4. Experience. Qualification and in possession of AFSC 4T031. Also, experience in performing functions in urinalysis, hematology, bacteriology, serology, and chemistry.

13.1.5. Other. Same as AFSC 4T031.

13.2. Training Sources/Resources. Successful completion of CDCs 4T051A, 4T051B, and 4T051C satisfies the knowledge requirements specified in the specialty qualification for the award of the 5-skill level.

13.3. Implementation. Entry into 5-skill level upgrade training is initiated immediately after arrival at first permanent duty station. The 5-skill level is awarded when an individual: (1) possesses the 3-skill level, (2) completes a minimum of 12 months in 5-skill level UGT, (3) completes the appropriate 5-skill level CDCs, (4) completes core tasks as specified in Part 1, paragraph 5.2. (see note), (5) completes all STS tasks for the assigned duty position, and (6) is recommended by his/her supervisor according to AFI 36-2101.

14. Craftsman Level Training (7-skill level):

14.1. Specialty Qualifications. All 4T051 qualifications apply to 4T071 requirements.

14.1.1. Knowledge. N/A

14.1.2. Education. N/A

14.1.3. Training. There are no formal training requirements.

14.1.4. Experience. The following experience is mandatory for the award of the 4T071 AFSC: qualification and possession of AFSC 4T051.

14.1.5. Other. Same as AFSC 4T031.

14.2. Training Sources/Resources. See paragraph 7.3. for more details regarding the award of the 7 skill- level.

14.3. Implementation. The 7-skill level is awarded when an individual: (1) possesses the 5-skill level and is in the rank of SSgt or above, (2) completes a minimum of 12 months UGT, (3) qualifies by completing the requirements listed in paragraph 7.3., (4) completes all STS tasks for the assigned duty position, and (5) is recommended by their supervisor .

15. Superintendent Level (9-skill level):

15.1. Specialty Qualifications. All 4T071 qualifications apply to 4T090 requirements.

15.1.1. Knowledge. Knowledge of overall administrative, logistical, managerial, and technical laboratory activities is mandatory.

15.1.2. Education. Completion of an Associates Degree in Medical Laboratory Technology highly encouraged. Completion of additional degrees in medical laboratory or management-related fields of study encouraged.

15.1.3. Training. There are no formal training requirements.

15.1.4. Experience. For award of AFSC 4T090, qualification in and possession of either AFSC 4T071 or 4T072 is mandatory.

15.1.5. Other. N/A.

15.2. Training Sources/Resources. N/A.

15.3. Implementation. The 9-skill level is awarded when an individual: (1) possesses a 7-skill level, (2) is a SMSgt, and (3) has completed any other requirements specified in AFI 36-2101.

Section D - Resource Constraints

16. Purpose. This section identifies known resource constraints which preclude optimal/desired training from being developed or conducted, including information such as cost and manpower. Narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training are included. Also included in this section are actions required, office of primary responsibility, and target completion dates. Resource constraints are reviewed and updated at least annually.

17. Apprentice 3-Skill Level Training: No 3-skill level resource constraints exist.

18. Journeyman 5-Skill Level Training: No 5-skill level resource constraints exist

19. Craftsman 7-Skill Level Training: No 7-skill level resource constraints exist.

Section E - Transitional Training Guide – There are currently no transitional training requirements. This area is reserved.

PART II

Section A – Course/Specialty Training Standard

1. Implementation. This STS will be used for technical training provided by AETC for Medical Laboratory Apprentice Phase I and Medical Laboratory Apprentice Phase II graduating after 1 November 2015.

2. Purpose. As prescribed in AFI 36-2201, this STS:

2.1. Lists in Column 1 (Tasks, Knowledge, and Technical References). Identifies the most common tasks, knowledge, and technical references (TR) necessary for Airman to perform duties in the 3-, and 5-skill level. Task statements are numbered sequentially (i.e., 1.1., 1.2., 2.1.). **Column 2** identifies Core Tasks by asterisk (*) for specialty-wide training requirements and tasks.

2.2. Provides certification for OJT. Column 3 is used to record completion of tasks and knowledge training requirements. Use automated training management systems to document technician qualifications, if available.

2.3. Shows formal training and correspondence course requirements. Column 4 shows the proficiency to be demonstrated on the job by the graduate as a result of training on the task/knowledge and the career knowledge provided by the correspondence course. See Air Force Career Development Academy/AFSC/CDC listing maintained by the unit training manager for current CDC listings. If the supervisor wants the trainee skilled at a higher level than is indicated, additional qualification training must occur at the local level, and be documented appropriately on the trainee's AF Form 623a, **On-the-Job Training Record Continuation Sheet**.

2.4. Qualitative Requirements. The page prior to the STS contains the proficiency code key used to indicate the level of training and knowledge provided by resident training and career development courses.

2.5. Becomes a job qualification standard (JQS). For OJT when placed in AFTR, complete AF Form 623 Part I, Individual Training Record, and use in accordance with AFI 36-2201. When used as a JQS, the following requirements apply:

2.5.1. Documentation. Document and certify completion of training. Identify duty position requirements by populating STS tasks onto the DTL. As a minimum, complete the following columns in Part II of the CFETP: Training Completed, Trainee Initials, Trainer Initials, Certifier Initials (if applicable). An AFJQS may be used in lieu of Part II of the CFETP only upon approval of the AFCFM. **NOTE:** The AFCFM may supplement these minimum documentation procedures as needed or deemed necessary for the career field.

2.5.1.1. Transcribing from old CFETP to new CFETP. Refer to AFI 36-2201. The CFM will provide transcription instructions to the AFTR program manager. This process will be seamless to the field user as all existing trainee records will be auto-transcribed.

2.5.1.2. Documenting Career Knowledge. When a CDC is not available: the supervisor identifies STS training references that the trainee requires for career knowledge and ensures, as a minimum,

that trainees cover the mandatory items in AFECD. For 2-time CDC course exam failures, see AFI 36-2201 for specific instructions. **NOTE:** Career Knowledge must be documented prior to submitting a CDC waiver.

2.5.1.3. Decertification and Recertification. When an Airman is found to be unqualified on a task previously certified for his or her position, the supervisor utilizes the decertification feature found in AFTR. Then appropriate remarks are entered on the AF Form 623a, documenting the reason for decertification. Upon subsequent recertification, document AFTR for any other training requirements. See AFI 36-2201 for specific instructions.

2.5.2. Training Standard. Tasks are trained and qualified to the Go/No Go level. “Go” means the individual can perform the task without assistance and meets local demands for accuracy, timeliness, and correct use of procedures. “No Go” means the individual cannot perform to the required level to meet local demands. See AFI 36-2201 for specific instructions.

2.6. The STS is a guide for development of promotion tests used in the WAPS. SKTs are developed at the USAF Occupational Measurement Squadron by SNCOs with extensive practical experience in their career fields. The tests sample knowledge of STS subject matter areas judged by test development team members as most appropriate for promotion to higher grades. Questions are based upon study references listed in the WAPS catalog. Individual responsibilities are in Chapter 1, Paragraph 1.19, and Chapter 5 of AFI 36-2605, *Air Force Military Personnel Testing System*.

3. Recommendations. Identify inadequacies and recommended changes to this training standard through channels to 937 TRG/TTS, 2931 Harney Fort Sam Houston, TX 78234. For convenience, the Customer Services Information Line (CSIL), DSN 420-1080 (commercial 210-808-1080), has been installed to promptly report your findings. Be sure to reference specific STS paragraphs when forwarding report.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

THOMAS W. TRAVIS
Lieutenant General, USAF, MC, CFS
Surgeon General

Attachment
STS: Medical Laboratory (4T0X1)

Block Is For Identification Purposes Only	
Name Of Trainee	
Printed Name (Last, First, Middle Initial)	Initials (Written)
Printed Name Of Certifying Official And Written Initials	
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I
N/I	N/I

QUALITATIVE REQUIREMENTS

Proficiency Code Key		
	Scale Value	Definition: The individual
TASK PERFORMANCE LEVELS	1	Can do simple parts of the task. Needs to be told or shown how to do most parts of the task. (Extremely Limited)
	2	Can do most parts of the task. Needs help on only the hardest parts. (Partially Proficient)
	3	Can do all parts of the task. Needs only a spot check of the completed work. (Competent)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (Highly Proficient)
TASK KNOWLEDGE LEVELS (Note 1)	a	Can name parts, tools, and simple tasks about the task. (Nomenclature)
	b	Can determine step-by-step procedures for doing the task. (Procedures)
	c	Can identify why and when the task must be done and why each step is needed. (Operating Principles)
	d	Can predict, isolate, and resolve problems about the task. (Advanced Theory)
SUBJECT KNOWLEDGE LEVELS (Note 2)	A	Can identify basic facts and terms about the subject. (Facts)
	B	Can identify relationships of basic facts and state general principles about the subject (Principles)
	C	Can analyze facts and principles and draw conclusions about the subject. (Analysis)
	D	Can evaluate conditions and make proper decisions about the subject. (Evaluation)
<p>Explanations</p> <p>Note 1: A task knowledge scale value may be used alone or with a task performance scale value to define a level of knowledge for a specific task. (Example: b and 1b)</p> <p>Note 2: A subject knowledge scale value is used alone to define a level of knowledge for a subject not directly related to any specific task, or for a subject common to several tasks.</p> <p>- This mark is used instead of a scale value to show that no proficiency training is provided in the course/CDC. If used after a previous scale value has been attained/certified, the applicable proficiency level is still required to be validated/certified.</p> <p>* This mark, in column 2, represents those tasks that must be taught when courses are accelerated in a wartime environment. These tasks will be taught in the 3-skill level course in a streamlined training environment.</p> <p>Note 3: In block 2, the * or 7 mark is used to indicate core task requirements in an identified skill level for upgrade training.</p>		

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	A		B	C
							3 Skill Level		5 Skill Level	7 Skill Level
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	Phase I Course	Phase II Course	CDC	CDC
1. CAREER LADDER PROGRESSION TR: AFIs 36-2101, 36-2306, 36-2201, 41-104; CCAF Catalog, AFECD at http://ask.afpc.randolph.af.mil										
1.1. The airman career ladder and educational opportunities						B	-	-	-	
1.2. 4TOX1 career ladder progression						A	-	-	-	
1.3. 4TOX1 duties						A	-	-	-	
1.4. AFMS/Laboratory service organization and mission						A	-	-	-	
2. MEDICAL READINESS (Initial Medical Readiness Training directed by AFI 41-106 is provided in the Basic Medical Readiness course conducted by the 937 Training Group, Camp Bullis, San Antonio Texas. Completed training is documented on the front side of the student training record for each course graduation. Continuing/on-going Medical Readiness Training for the individual is the responsibility of each MTF)										
2.1. Biowarfare and bioterrorism						B	-	B	-	
2.2. Perform Basic Life Support (BLS)						-	3c	-	-	
3. RESERVED										
4. AF OCCUPATIONAL SAFETY & HEALTH (AFOSH) PROGRAM TR: AFIs 91-203 & 91-302; CLSI, Clinical Laboratory Safety (GP 17-A2)										
4.1. Hazards/AFOSH standards						B	-	B	-	
4.2. Safety precautions						-	-	B	-	
4.3. Exercise safety precautions						2b	3c	-	-	
4.4. Accident Reports						B	-	B	-	
4.5. Safety and chemical hygiene programs						B	-	-	-	
5. PROFESSIONAL AND PATIENT RELATIONSHIPS TR: AFI 44-102; DoD 5500.7, Chapter 12, Sections 3, 4, 5, & 6										
5.1. Professional standards of ethics						B	-	B	-	
5.2. Customer service										
5.2.1. AFMS customer service standards						B	-	-	-	
5.2.2. Identification of key AFMS customers						A	-	-	-	
5.3. Customer care basics						B	-	-	-	
5.4. Listening techniques and nonverbal communication						A	-	-	-	
6. MEDICAL MATERIEL PROCEDURES TR: AFMAN 23-110, Vol. 2, Part 2										
6.1. Air Force accountability and responsibility						B	-	-	-	
6.2. Fundamentals of supply and equipment						A	-	-	-	
6.3. Maintain supply resources						a	2b	-	-	
6.4. Methods of procurement						A	-	B	B	
7. SUPERVISION TR: 36-2103, 36-2406, 36-2502, 36-2907; 36-2101; AFPAMs 36-2241, 36-2627; Local Policies										
7.1. Orient new personnel	7					-	-	-	-	
7.2. Plan and schedule work assignments and priorities	7					-	-	-	-	
7.3. Establish work performance standards for subordinates	7					-	-	-	-	
7.4. Evaluate work performance of subordinate personnel						-	-	-	-	
7.5. Resolve technical problems						-	-	-	-	
7.6. Counsel personnel and resolve individual problems	7					-	-	-	-	
7.7. Initiate action to correct sub-standard performance by personnel	7					-	-	-	-	
8. TRAINING TR: AFIs 36-2101, 36-2201; AFECD										
8.1. Evaluate personnel to determine need for training	7					-	-	-	-	
8.2. Plan and supervise OJT						-	-	-	-	
8.2.1. Prepare job qualification standards (JQS)	7					-	-	-	-	
8.2.2. Design/conduct work center specific training	7					-	-	-	-	
8.2.3. Counsel trainees on their progress	7					-	-	-	-	
8.2.4. Monitor qualification & competency effectiveness	7					-	-	-	-	
8.3. Maintain training records	7					-	-	-	-	
8.4. Evaluate effectiveness of training programs	7					-	-	-	-	
8.5. Recommend personnel for training	7					-	-	-	-	

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	3 Skill Level		B	C
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	Phase I Course	Phase II Course	5 Skill Level CDC	7 Skill Level CDC
9. MEDICAL LABORATORY ADMINISTRATION TR: CHCS Training Curriculum and local operating instructions; AFI 41-102, 33-322, 33-360, 41-120; CLIA CFR 42; JCAHO WT.01.01.01; DoD 6015.1-M; CAP Standards; Local Policies										
9.1. Laboratory Information System										
9.1.1. Perform preanalysis phase							-	2b	-	-
9.1.2. Perform analysis phase							-	2b	-	-
9.1.3. Perform postanalysis phase							-	1b	-	-
9.1.4. Management phase							-	-	B	-
9.2. Fundamentals of workload reports	7						-	-	-	B
9.3. Quality control										
9.3.1. Quality control principles							A	-	B	-
9.3.2. Perform quality control	*						2b	2b	-	-
9.3.3. Quality control evaluation							-	-	-	B
9.4. Files Maintenance							-	-	B	-
9.5. Use operating instructions (OIs)	*						1a	2b	-	-
9.6. OI Development							-	-	B	-
9.7. Accreditation/regulatory agencies	7						B	-	B	B
9.8. Point-of-care testing (POCT) activities										
9.8.1. Point of Care testing							B	-	B	-
9.8.2. POCT monitoring	7						-	-	-	B
9.9. Cost accounting	7						-	-	-	B
9.10. Manpower standards and documents	7						-	-	-	B
9.11. New technologies							-	-	-	-
9.12. Medical terminology							A	-	A	-
9.13. Correlation/Parallel Studies							-	-	A	B
9.14. Calibrations							-	-	-	B
10. GENERAL ANATOMY AND PHYSIOLOGY TR: Applied Anatomy & Physiology										
10.1. Circulatory and Lymphatic systems							B	-	-	-
10.2. Skeletal, Muscular, and Integumentary systems							B	-	-	-
10.3. Nervous system							B	-	-	-
10.4. Endocrine system							B	-	-	-
10.5. Renal system							B	-	-	-
10.6. Digestive system							B	-	-	-
10.7. Respiratory system							B	-	-	-
11. COLLECT BLOOD SPECIMENS TR: CLSI: Procedures and Devices for the Collection of Diagnostic Blood Specimens by Skin Puncture (H4-A6), Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture (H3-A6)										
11.1. Phlebotomy fundamentals							B	-	B	-
11.2. Age specific training										
11.2.1. Neonatal										
11.2.1.1. Neonatal capillary							B	-	B	-
11.2.1.2. Neonatal venous							B	-	B	-
11.2.1.3. Newborn screening							B	-	B	-
11.2.2. Pediatric							B	-	B	-
11.2.3. Adolescent							B	-	B	-
11.2.4. Adults							-	-	B	-
11.2.5. Geriatric							B	-	B	-
11.3. Perform phlebotomy										
11.3.1. Neonatal										
11.3.1.1. Capillary							-	2e	-	-
11.3.1.2. Venous							-	2e	-	-
11.3.1.3. Newborn screening							-	2e	-	-
11.3.2. Pediatric							-	2e	-	-
11.3.3. Adolescent							-	3e	-	-
11.3.4. Adults										
11.3.4.1. Capillary	*						2b	3e	-	-
11.3.4.2. Venous	*						2b	3e	-	-

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided				
		A	B	C	D	E	A		B	C	
		3 Skill Level		5 Skill Level	7 Skill Level		3 Skill Level		5 Skill Level	7 Skill Level	
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	Phase I Course	Phase II Course	CDC	CDC	
11.3.5. Geriatric											
12. IMMUNOLOGY (SEROLOGY) TR: Immunology; Immunology and Serology in Laboratory Medicine; Clinical Immunology; Principles and Laboratory Diagnosis; Clinical Laboratory Medicine											
12.1. Immunology principles						B	-	B	-		
12.2. Syphilis						B	-	B	-		
12.3. Infectious mononucleosis						B	-	B	-		
12.4. Rheumatoid						B	-	B	-		
12.5. Rubella						B	-	B	-		
12.6. Hepatitis						B	-	B	-		
12.7. Beta HCG						B	-	B	-		
12.8. HIV						B	-	B	-		
12.9. Viral studies to include:											
12.9.1. Cytomegalovirus (CMV)						B	-	B	-		
12.9.2. Respiratory syncytial virus (RSV)						B	-	B	-		
12.9.3. Human T-cell lymphotropic virus (HTLV)						B	-	B	-		
12.9.4. Varicella zoster virus (VZV)						B	-	B	-		
12.10. Rapid identification testing						B	-	B	-		
12.11. Immunology Procedures											
12.11.1. Perform syphilis testing						-	3b	-	-		
12.11.2. Perform mononucleosis testing						-	3b	-	-		
12.11.3. Perform rheumatoid testing						-	3b	-	-		
12.11.4. Qualitative beta HCG	*					b	3b	-	-		
12.11.5. Quantitative beta HCG						-	3b	-	-		
12.11.6. Rapid identification testing						-	3b	-	-		
12.12. Operate and maintain equipment						-	-	-	-		
12.13. Prepare and process specimen for shipment						-	-	-	-		
13. BLOOD BANK/IMMUNOHEMATOLOGY TR: APT 44-105, Air Force Blood Program; DoDI 6480.4, Armed Services Blood Program Operational Procedures											
13.1. Immunohematology fundamentals						B	-	B	-		
13.2. Blood grouping and typing											
13.2.1. ABO grouping						B	-	B	-		
13.2.2. Rh typing						B	-	B	-		
13.2.3. Indirect antiglobulin test						B	-	B	-		
13.2.4. Direct antiglobulin test						B	-	B	-		
13.2.5. Antibody identifications											
13.2.5.1. Elution/absorption/adsorption						B	-	B	-		
13.2.5.2. Pre-warm/cold agglutinins technique						B	-	B	-		
13.2.6. Antibody titers						B	-	B	-		
13.3. Transfusion services											
13.3.1. Routine compatibility testing						B	-	B	-		
13.3.2. Rh Immune Globulin (RhIG) eligibility						B	-	B	-		
13.3.3. Prenatal workup						B	-	B	-		
13.3.4. Newborn workup						B	-	B	-		
13.3.5. Transfusion reaction workups						B	-	B	-		
13.3.6. Blood or components for issue						B	-	B	-		
13.3.7. Blood or component receipt/storage						B	-	B	-		
13.3.8. Selection of nongroup specific components						B	-	B	-		
13.3.9. Red cell antigen screening						B	-	B	-		
13.3.10. Transfusion service records						B	-	B	-		
13.3.11. Documentation and maintenance						B	-	B	-		
13.3.12. Blood Bank information system						B	-	B	-		
13.3.13. Fetal maternal hemorrhage testing						B	-	B	-		
13.4. Donor service procedures											
13.4.1. Active donor rosters						-	-	B	-		
13.4.2. Donor service records						-	-	B	-		
13.4.3. Donor screens						-	-	B	-		
13.4.4. Donor phlebotomy						-	-	B	-		

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	A		B	C
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level		5 Skill Level CDC	7 Skill Level CDC
					Phase I Course	Phase II Course				
13.4.5. Donor blood processing						-	-	B	-	
13.4.6. Blood or components preparation						-	-	B	-	
13.4.7. Blood or components shipment						-	-	B	-	
13.5. Perform blood grouping and typing procedures										
13.5.1. ABO grouping	*					2b	2c	-	-	
13.5.2. Rh typing	*					2b	2c	-	-	
13.6. Perform atypical antibody studies										
13.6.1. Indirect antiglobulin test	*					2b	2c	-	-	
13.6.2. Direct antiglobulin test	*					2b	2c	-	-	
13.7. Antibody identifications						2b	2c	-	-	
13.8. Antibody titers						2b	2b	-	-	
13.9. Perform transfusion service procedures										
13.9.1. Routine compatibility testing	*					2b	2c	-	-	
13.9.2. Rh Immune Globulin (RhIG) eligibility						2b	2c	-	-	
13.9.3. Prepare blood or components for issue	*					b	2c	-	-	
13.9.4. Issue blood or components	*					b	2c	-	-	
13.9.5. Receive/store blood or components	*					b	2c	-	-	
13.9.6. Select nongroup specific components	*					2b	2c	-	-	
13.9.7. Screen red cell antigen						b	2c	-	-	
13.9.8. Maintain transfusion/donor service records						b	2b	-	-	
13.10. Perform fetal maternal hemorrhage testing						-	2b	-	-	
13.11. Donor service procedures										
13.11.1. Maintain active donor rosters						b	-	-	-	
13.11.2. Maintain donor service records						b	-	-	-	
13.11.3. Screen donors	*					2b	-	-	-	
13.11.4. Perform donor phlebotomy	*					2a	-	-	-	
13.11.5. Process donor blood						b	-	-	-	
13.11.6. Prepare blood or components						a	-	-	-	
13.11.7. Ship blood or components						a	-	-	-	
13.12. Operate and maintain equipment						-	-	-	-	
13.13. Prepare and process specimen for shipment						-	-	-	-	
14. HEMATOLOGY TR: The Morphology of Human Blood Cells; Clinical Hematology and Fundamentals of Hemostasis; Body Fluids; Clinical Hematology--Principles, Procedures, & Correlations; Principles of Laboratory Instruments										
14.1. Hematology fundamentals						B	-	B	-	
14.2. Microscope operations						-	-	B	-	
14.3. Hematology procedures										
14.3.1. White blood cell counts (WBC)						B	-	B	-	
14.3.2. Red blood cell counts (RBC)						B	-	B	-	
14.3.3. Hemoglobin						B	-	B	-	
14.3.4. Hematocrit						B	-	B	-	
14.3.5. RBC indices						B	-	B	-	
14.3.6. Differentials/morphology						B	-	B	-	
14.4. Sickle cell testing						B	-	B	-	
14.5. Reticulocyte counts						B	-	B	-	
14.6. Erythrocyte sedimentation rate						B	-	B	-	
14.7. Platelet counts						B	-	B	-	
14.8. G-6-PD screen						B	-	B	-	
14.9. Blood smears for malarial parasites						B	-	B	-	
14.10. Coagulation/Hemostasis principles						B	-	B	-	
14.11. Coagulation/Hemostasis procedures										
14.11.1. Activated partial thromboplastin time (APTT)						B	-	B	-	
14.11.2. Prothrombin time (PT) and international normalized ratio (INR)						B	-	B	-	
14.11.3. Disseminated intravascular coagulation (DIC) screens (D-dimer, FDP)						B	-	B	-	
14.11.4. Fibrinogen						B	-	B	-	
14.11.5. Mixing studies						B	-	B	-	
14.11.6. Platelet function studies						B	-	B	-	

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	A		B	C
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	Phase II Course	5 Skill Level CDC	7 Skill Level CDC
14.12. Related hematology procedures										
14.12.1. Semen analysis						B	-	B	-	
14.12.2. Cerebrospinal fluid (CSF) counts						B	-	B	-	
14.12.3. Other body fluids						B	-	B	-	
14.13. Automated hematology analyzers						-	-	B	-	
14.14. Automated coagulation analyzers						-	-	B	-	
14.15. Perform microscope operations	*					2b	2c	-	-	
14.16. Perform hematology procedures										
14.16.1. White blood cell counts (WBC)	*					2b	2c	-	-	
14.16.2. Red blood cell counts (RBC)	*					2b	2c	-	-	
14.16.3. Hemoglobin	*					2b	2c	-	-	
14.16.4. Hematocrit	*					2b	2c	-	-	
14.16.5. RBC indices						2b	2c	-	-	
14.16.6. Differentials/morphology	*					2b	2c	-	-	
14.17. Perform sickle cell testing						2b	2c	-	-	
14.18. Perform reticulocyte counts						2b	2c	-	-	
14.19. Perform erythrocyte sedimentation rate						b	2c	-	-	
14.20. Perform platelet counts	*					2b	2c	-	-	
14.21. Perform blood smears for differentials and malarial parasites	*					b	3c	-	-	
14.22. Perform coagulation/hemostasis procedures										
14.22.1. Activated partial thromboplastin time (APTT)	*					b	2c	-	-	
14.22.2. Prothrombin time (PT) and international normalized ratio (INR)	*					b	2c	-	-	
14.22.3. Disseminated intravascular coagulation (DIC) screens (D-dimer, FDP)						-	2b	-	-	
14.22.4. Fibrinogen						b	-	-	-	
14.23. Perform related hematology procedures										
14.23.1. Semen analysis						b	2b	-	-	
14.23.2. Cerebrospinal fluid (CSF) counts	*					b	2c	-	-	
14.23.3. Other body fluids	*					b	2b	-	-	
14.24. Operate automated hematology analyzers	*					2b	2b	-	-	
14.25. Operate automated coagulation analyzers	*					b	2b	-	-	
14.26. Operate and maintain equipment						-	-	-	-	
14.27. Prepare and process specimen for shipment						-	-	-	-	
15. CLINICAL CHEMISTRY TR: Tietz Textbook of Clinical Chemistry; Henry Clinical Diagnosis and Management by Laboratory Methods; Clinical Chemistry: Theory, Analysis and Correlation; Clinical Laboratory Medicine; CLSI: H18-A3: Procedures for Handling and Processing Blood Specimens, Approved Guideline; Principles of Laboratory Instruments										
15.1. Clinical chemistry fundamentals						B	-	B	-	
15.2. Basic organic chemistry						B	-	B	-	
15.3. Basic inorganic chemistry						B	-	B	-	
15.4. Automated chemistry analyzers						A	-	B	-	
15.5. Blood chemistry analytes										
15.5.1. Enzymes										
15.5.1.1. Amylase						B	-	B	-	
15.5.1.2. Lipase						B	-	B	-	
15.5.1.3. Alkaline phosphatase (ALP)						B	-	B	-	
15.5.1.4. Aspartate aminotransferase (AST)						B	-	B	-	
15.5.1.5. Alanine aminotransferase (ALT)						B	-	B	-	
15.5.1.6. Gamma glutamyltransferase (GGT)						B	-	B	-	
15.5.1.7. Lactate dehydrogenase (LD)						B	-	B	-	
15.5.1.8. Creatine kinase (CK)						B	-	B	-	
15.5.2. Cardiac markers										
15.5.2.1. CK-MB						B	-	B	-	
15.5.2.2. Troponin						B	-	B	-	
15.5.2.3. Myoglobin						B	-	B	-	
15.5.3. Lipid profile										

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	A		B	C
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	Phase II Course	5 Skill Level CDC	7 Skill Level CDC
15.5.3.1. Cholesterol						B	-	B	-	
15.5.3.2. Triglycerides						B	-	B	-	
15.5.3.3. High-density lipoprotein (HDL)						B	-	B	-	
15.5.3.4. Low-density lipoprotein (LDL)						B	-	B	-	
15.5.3.5. Very-low density lipoprotein (VLDL)						B	-	B	-	
15.5.3.6. Lipid ratios						B	-	B	-	
15.5.4. Serum proteins										
15.5.4.1. Total protein						B	-	B	-	
15.5.4.2. Albumin						B	-	B	-	
15.5.4.3. A/G ratio						B	-	B	-	
15.5.5. Carbohydrates						B	-	B	-	
15.5.6. Hemoglobin A1C						B	-	B	-	
15.5.7. Creatinine						B	-	B	-	
15.5.8. Bilirubin						B	-	B	-	
15.5.9. Blood urea nitrogen (BUN)						B	-	B	-	
15.5.10. Uric acid						B	-	B	-	
15.5.11. Electrolytes										
15.5.11.1. Sodium (Na+)						B	-	B	-	
15.5.11.2. Potassium (K+)						B	-	B	-	
15.5.11.3. Chloride (Cl-)						B	-	B	-	
15.5.11.4. CO2						B	-	B	-	
15.5.11.5. Magnesium (Mg2+)						B	-	B	-	
15.5.11.6. Calcium (Ca2+)						B	-	B	-	
15.5.11.7. Phosphate (PO4-3)						B	-	B	-	
15.5.11.8. Anion gap						B	-	B	-	
15.5.12. Blood gases						B	-	B	-	
15.5.13. Urine chemistries						B	-	B	-	
15.5.14. Cerebrospinal fluid (CSF)						B	-	B	-	
15.5.15. Other body fluids						B	-	B	-	
15.5.16. Toxicology procedures						A	-	B	-	
15.5.17. Therapeutic drug monitoring (TDM)						A	-	B	-	
15.5.18. Blood alcohol										
15.5.18.1. Medical						B	-	B	-	
15.5.18.2. Legal						B	-	B	-	
15.5.19. Vitamins						B	-	B	-	
15.5.20. Endocrine studies						B	-	B	-	
15.5.21. Tumor markers						B	-	B	-	
15.5.22. Iron studies										
15.5.22.1. Iron (Fe)						B	-	B	-	
15.5.22.2. TIBC						B	-	B	-	
15.5.22.3. Ferritin						B	-	B	-	
15.6. Operate automated chemistry analyzers	*					-	3b	-	-	
15.7. Perform chemistry analyses										
15.7.1. Enzymes	*					-	3b	-	-	
15.7.2. Cardiac markers	*					-	3b	-	-	
15.7.3. Lipids	*					-	3b	-	-	
15.7.4. Electrolytes	*					-	3b	-	-	
15.7.5. Iron studies						-	3b	-	-	
15.7.6. Endocrine studies						-	3b	-	-	
15.7.7. Glucose	*					-	3b	-	-	
15.7.8. Bilirubin	*					-	3b	-	-	
15.7.9. Proteins	*					-	3b	-	-	
15.7.10. Hemoglobin A1C						-	3b	-	-	
15.7.11. Tumor markers						-	3b	-	-	
15.7.12. Blood urea nitrogen (BUN)/Creatinine	*					-	3b	-	-	
15.7.13. Uric acid						-	3b	-	-	
15.7.14. Urine chemistries						-	3b	-	-	
15.7.15. Therapeutic drug monitoring (TDM)						-	3b	-	-	
15.7.16. CSF	*					-	3b	-	-	

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	A		B	C
							3 Skill Level		5 Skill Level	7 Skill Level
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	Phase I Course	Phase II Course	CDC	CDC
15.7.17. Other body fluids	*						-	3b	-	-
15.7.18. Toxicology							-	3b	-	-
15.7.19. Blood alcohol									-	-
15.7.19.1. Medical	*						-	3b	-	-
15.7.19.2. Legal	*						a	-	-	-
15.7.20. Analytes							-	3b	-	-
15.8. Operate and maintain equipment							-	-	-	-
15.9. Prepare and process specimen for shipment							-	-	-	-
16. URINALYSIS PROCEDURES TR: Tietz Textbook of Clinical Chemistry; Urinary Sediment: A Textbook Analysis; Clinical Diagnosis and Management by Laboratory Methods; Clinical Hematology--Principles, Procedures, and Correlations; Principles of Laboratory Instruments										
16.1. Urinalysis fundamentals							B	-	B	-
16.2. Macroscopic analysis							B	-	B	-
16.3. Microscopic examinations							B	-	B	-
16.4. Qualitative and semi-quantitative urine chemistry procedures (i.e. dipsticks)							B	-	B	-
16.5. Confirmatory tests							B	-	B	-
16.6. Perform macroscopic analysis	*						2b	3b	-	-
16.7. Perform microscopic examinations	*						2b	3b	-	-
16.8. Perform qualitative and semi-quantitative urine chemistry procedures (i.e. dipsticks)	*						2b	3b	-	-
16.9. Perform confirmatory tests	*						2b	3b	-	-
16.10. Operate automated urine analyzer							-	3b	-	-
16.11. Operate and maintain equipment							-	-	-	-
16.12. Prepare and process specimen for shipment							-	-	-	-
17. MICROBIOLOGY PROCEDURES TR: Atlas of Human Parasitology; Bailey & Scott's Diagnostic Microbiology; Color Atlas and Textbook of Diagnostic Microbiology; Medically Important Fungi, A Guide to Identification; Medical Microbiology; Manual of Clinical Microbiology; Foundations of Parasitology										
17.1. Microbiology fundamentals							B	-	B	-
17.2. Biological specimen collection instructions							-	-	B	-
17.3. Characteristics of microorganisms										
17.3.1. Aerobic gram positive cocci							B	-	B	-
17.3.2. Aerobic gram negative cocci							B	-	B	-
17.3.3. Aerobic gram positive bacilli							B	-	B	-
17.3.4. Aerobic gram negative bacilli							B	-	B	-
17.3.5. Anaerobes							B	-	B	-
17.3.6. Microaerophillics							B	-	B	-
17.4. Microscopic examination										
17.4.1. Darkfield microscopy							A	-	B	-
17.4.2. Potassium hydroxide (KOH)							B	-	B	-
17.4.3. India ink preparation							A	-	B	-
17.4.4. Fecal leukocytes							B	-	B	-
17.4.5. Gram stain							B	-	B	-
17.4.6. Wet prep							B	-	B	-
17.4.7. Acid fast bacillus stain							B	-	B	-
17.5. Bacteria identification										
17.5.1. Culture and staining							B	-	B	-
17.5.2. Biochemical tests							B	-	B	-
17.5.3. Serological tests							B	-	B	-
17.6. Susceptibility tests							B	-	B	-
17.7. Parasitology fundamentals										
17.7.1. Blood and tissue protozoa							B	-	B	-
17.7.2. Intestinal and urogenital protozoa							B	-	B	-
17.7.3. Intestinal and tissue helminths							B	-	B	-
17.7.4. Arthropods							B	-	B	-
17.8. Ova and parasite identification										
17.8.1. Concentration techniques							B	-	B	-

1. Tasks, knowledge and Technical References	2. Core Tasks (*)	3. Certification for OJT					4. Proficiency Codes Used To Indicate Training/Information Provided			
		A	B	C	D	E	3 Skill Level		B 5 Skill Level CDC	C 7 Skill Level CDC
		Training Start Date	Training Complete Date	Trainee Initials	Trainer Initials	Certifier Initials	Phase I Course	Phase II Course		
17.8.2. Permanent stained slides							B	-	B	-
17.8.3. Macroscopic analysis							B	-	B	-
17.8.4. Pinworm technique							B	-	B	-
17.9. Occult blood screens							B	-	B	-
17.10. Mycology fundamentals							A	-	B	-
17.11. Automated analyzers							A	-	B	-
17.12. Polymerase chain reaction (PCR)							B	-	B	-
17.13. Provide biological specimen collection instructions	*						b	3b	-	-
17.14. Perform microscopic examination of biological material										
17.14.1. Potassium hydroxide (KOH)	*						b	2b	-	-
17.14.2. India ink preparation							-	-	-	-
17.14.3. Fecal leukocytes							2b	2c	-	-
17.14.4. Gram stain	*						2c	3c	-	-
17.14.5. Wet prep	*						b	2b	-	-
17.14.6. Acid fast bacillus stain							b	-	-	-
17.15. Perform bacteria identification										
17.15.1. Aerobic cultures	*						2b	2c	-	-
17.15.2. Anaerobic cultures	*						b	2c	-	-
17.15.3. Microaerophilic cultures	*						2b	2c	-	-
17.16. Identify bacteria using										
17.16.1. Culture and staining procedures	*						2b	2c	-	-
17.16.2. Biochemical procedures	*						2b	2c	-	-
17.16.3. Serological procedures							b	2c	-	-
17.17. Perform susceptibility testing	*						2b	2c	-	-
17.18. Identify ova and parasites using										
17.18.1. Concentration procedures							2b	2c	-	-
17.18.2. Permanent stained slides							a	2b	-	-
17.18.3. Macroscopic analysis	*						2b	2c	-	-
17.18.4. Pinworm identification							b	3c	-	-
17.19. Perform occult blood screens	*						2b	2c	-	-
17.20. Perform mycology testing							-	-	-	-
17.21. Operate automated analyzers							-	-	-	-
17.22. Operate and maintain equipment							-	-	-	-
17.23. Prepare and process specimen for shipment							-	-	-	-

**TECHNICAL REFERENCE (TR) SOURCE SUMMARY
FOR COMMERCIAL AND OTHER SERVICE PUBLICATIONS
STS 4T0X1**

Commercial Texts (all skill levels):

- Ash, Lawrence R. and Thomas C. Orihel, Atlas of Human Parasitology, American Society of Clinical Pathologists, ASCP Press. Most current version/edition.
- Baron, Ellen Jo, Lance R. Peterson, and Sydney M. Finegold, Bailey & Scott's Diagnostic Microbiology, Mosby Year Book, Inc. Most current version/edition.
- Burtis, Carl A. and Edward R. Ashwood, Tietz Textbook of Clinical Chemistry, W. B. Saunders Co. Most current version/edition.
- Diggs, Sturm, and Bell, The Morphology of Human Blood Cells, Abbott Laboratories. Most current version/edition.
- Haber, Meryl H., Urinary Sediment: A Textbook Atlas, American Society of Clinical Pathology, ASCP Press. Most current version/edition.
- Harmening, Denise M., Clinical Hematology and Fundamentals of Hemostasis, F.A. Davis Co. Most current version/edition.
- Henry, John B., Clinical Diagnosis and Management by Laboratory Methods, W.B. Saunders Co. Most current version/edition.
- Kaplan, Lawrence A. and Amadeo J. Pesce, Clinical Chemistry: Theory, Analysis and Correlation, Mosby Year Book. Most current version/edition.
- Kjeldsberg, C.R. and J.A. Knight, Body Fluids, American Society of Clinical Pathology Press, Chicago. Most current version/edition.
- Koneman, Elmer W. and Stephen D. Allen, Color Atlas and Textbook of Diagnostic Microbiology, J.B. Lippincott Co.
- Lavone, Davise H., Medically Important Fungi, A Guide to Identification, American Society of Microbiology. Most current version/edition.
- Lotspeich-Steininge, Cheryl, Clinical Hematology - Principles, Procedures, and Correlations, J. B. Lippincott. Most current version/edition.
- McClatchey, Kenneth D., Clinical Laboratory Medicine, Williams and Wilkins. Most current version/edition.
- Murray, Patrick, Kobaysahi, G., Pfaller, M., Rosenthal, K., Medical Microbiology, Mosby Year Book. Most current version/edition.
- Murray, Patrick, et al (ed), Manual of Clinical Microbiology, American Society of Microbiology. Most current version/edition.
- Clinical and Laboratory Standards Institute, Clinical Laboratory Safety, Approved Guideline (GP17-A2), CLSI. Most current version/edition.
- Clinical Laboratory Technical Procedure Manuals; Approved Guidelines (GP2-A5), CLSI. Most current version/edition.
- Procedures and Devices for the Collection of Diagnostic Capillary Blood Specimens; Approved Standard (H4-A6), CLSI. Most current version/edition.
- Procedures for the Collection of Diagnostic Blood Specimens by Venipuncture; Approved Standard (H3-A5), CLSI. Most current version/edition.
- Procedures for the Handling and Processing of Blood Specimens; Approved Guideline (H18-A4), CLSI. Most current version/edition.
- Point-of-Care *in Vitro* Diagnostic (IVD) Testing; Approved Guideline (POCT4-A2), CLSI. Most current version/edition.

- Provider Performed Microscopy Testing; Proposed Guideline (HSO2-A), CLSI. Most current version/edition.
- Terminology and Definitions for Use in NCCLS Documents; Approved Standard (NRSCL8-A), CLSI. Most current version/edition.
- Roitt, Ivan, Jonathan Brostoff, and David Male, Immunology, Mosby. Most current version/edition.
- Schmidt, Gerald D. and Larry S. Roberts, Foundations of Parasitology, McGraw Hill. Most current version/edition.
- Schoeff, Larry E. and Robert H. Williams, Principles of Laboratory Instruments, Mosby Year Book. Most current version/edition.
- Sheehan, Catherine, Clinical Immunology, Principles and Laboratory Diagnosis, Lippincott, Williams & Wilkins. Most current version/edition.
- Taylor, Elizabeth J., et al (ed), Dorland's Illustrated Medical Dictionary, W. B. Saunders Co. Most current version/edition.
- Turgeon, Mary Louise, Immunology and Serology in Laboratory Medicine, Mosby Year Book. Most current version/edition.

Commercial Texts (3-Skill Level Only):

- Barlett, Margaret A., Diagnostic Bacteriology: A Study Guide, F.A. Davis Company, Philadelphia. Most current version/edition.
- Carr, Jacqueline H. and Rodak, Bernadette F., Clinical Hematology Atlas, W. B. Saunders Company. Most current version/edition.
- Dean, Theresa M. and Whitlock, Sheryl A., Clinical Chemistry: Delmar's Clinical Laboratory Manual Series, Delmar Publishers. Most current version/edition.
- Estridge, Barbara H., Reynolds, Anna P., and Walters, Norma J., Basic Medical Laboratory Techniques, Delmar Thompson Learning. Most current version/edition.
- Kern, Martha E. and Blevins, Kathleen S., Medical Mycology, A Self-Instruction Text, F. A. Davis Company, Philadelphia. Most current version/edition.
- Linne, Jean J. and Ringsrud, Karen M., Clinical Laboratory Science, The Basics and Routine Techniques, Mosby Inc. Most current version/edition.
- Murray, Patrick R., Rosenthal, Ken S., Kobayashi, George S. and Pfaller, Micheal A., Medical Microbiology, Mosby, Inc. Most current version/edition.
- Russell, Alan P., Hematology: Delmar's Clinical Laboratory Manual Series, Delmar Publishers. Most current version/edition.
- Strasinger, Susan K., Urinalysis and Body fluids, 3rd ed., F. A. Davis Company, Philadelphia. Most current version/edition.
- Whitlock, Sheryl A., Immunoematology: Delmar's Clinical Laboratory Manual Series, Delmar Publishers. Most current version/edition.
- Ziebig, Elizabeth A., Clinical Parasitology, A Practical Approach, W. B. Saunders Company. Most current version/edition.

Air Force Publications (All Skill Levels):

- AFI 33-322, *Records Management Program*
- AFI 33-360, V1, *Air Force Content Management Program -- Publications*
- AFI 36-2101, *Classifying Military Personnel*
- AFI 36-2103, *Individualized Newcomer Treatment and Orientation (INTRO) Program*
- AFI 36-2201, *Air Force Training Program*
- AFI 36-2306, *The Education Services Program*
- AFI 36-2406, *Officer and Enlisted Evaluation Systems*

AFI 36-2502, *Airman Promotion/Demotion Programs*
AFI 36-2503, *Administrative Demotion of Airmen*
AFI 36-2907, *Unfavorable Information File (UIF) Program*
AFI 41-102, *Air Force Medical Expense and Performance Reporting System (MEPRS) for Fixed
Military Medical and Dental Treatment Facilities*
AFI 41-104, *Professional Board and National Certification Examinations*
AFI 41-106, *Medical Readiness Program Management*
AFI 41-120, *Medical Resource Operations*
AFI 44-102, *Medical Care Management*
AFI 44-105, *Air Force Blood Program*
AFI 91-302, *Air Force Occupational and Environmental Safety, Fire protection, Health (AFOSH)
Standards*
AFMAN 23-110, *Materiel Management USAF Supply Manual*
AFOSH STD 91-8, *Medical Facilities*
AFPAM 36-2241, *Professional Development Guide (PDG)*
AFPAM 36-2627, *Airman and NCO Performance Feedback System (EES)*
DoD 5500.7, Chap. 12, Sec. 3, 4, 5, & 6, *Standards of Conduct*
DoD 6015.1-M, *DoD Glossary of Healthcare Terminology*
DoDI 6480.4, *Armed Services Blood Program (ASBP) Operational Procedures*

QUALITATIVE REQUIREMENTS

Section B – Course Objective List

4. Resident Courses. If a written list of the course objectives is required, contact the Medical Laboratory Apprentice course training manager at DSN 420-5160 or write to the 937 TRG/TTS, 2931 Harney Fort Sam Houston, TX 78234. A copy will be sent to you as soon as possible.

5. Career Development Courses. CDC information can be obtained from the Air Force Career Development Academy, formerly the Extension Course Institute, at Maxwell AFB, Gunter Annex, AL or by contacting the CDC Writer/Manager at DSN 420-5079.

Section C - Support Materials

6. Note: There are currently no support materials requirements. This area is reserved.

Section D – Training Course Index

7. Purpose. This section of the CFETP identifies training courses available for the specialty and shows how the courses are used by each MAJCOM in their career field training programs.

8. Air Force/DoD In-Resident Courses.

<u>COURSE NUMBER</u>	<u>COURSE TITLE</u>	<u>DEVELOPER</u>
L3AQJ4T031 01AA	Medical Laboratory Apprentice Course	Fort Sam Houston, TX
L5ABO4T031 02AB	Medical Laboratory Apprentice Course	Fort Sam Houston, TX and Various Medical Treatment

9. Exportable Courses. Not used.

10. Courses Under Development/Revision.

<u>COURSE NUMBER</u>	<u>COURSE TITLE</u>	<u>USER</u>
CDC 4T051A	Medical Laboratory Journeyman -Administration and Chemistry	AF
CDC 4T051B	Medical Laboratory Journeyman -Microbiology	AF
CDC 4T051C	Medical Laboratory Journeyman -Hematology, Immunology, and Blood Banking	AF

Section E – MAJCOM Unique Requirements

Air Reserve Component & Requirements

OPR: HQ AFRC/SGM, 115 2d St., Robins AFB, GA 31090-1635, DSN 497-1893.

11. Purpose: This part of the CFETP applies to **all** 4T0X1s assigned to **all** AFRC medical units and squadron medical elements.

11.1. Additional 3-skill level training requirements: Upon graduation from a Phase II Medical Laboratory Apprentice course, AF Reserve 4T031 personnel will forward a copy of their technical training school certificate (AF Form 1256) and Student Training Report to their reserve unit of assignment. The unit will then initiate an AF Form 2096 upgrade action to award the 3-skill level and enter the member in appropriate training status code (TSC) “B” or “F”. Concurrently, AF Reserve 4T031 personnel will be assigned to an active duty medical laboratory for up to 60 days or a minimum of 45 days to demonstrate competency on all core tasks as listed in this CFETP. Active duty trainers and/or task certifiers must ensure trainees satisfy core task training elements to the specified proficiency code(s). Upon completion of core tasks, trainees will be officially entered into 5-skill level UGT.

11.2. Additional 5-skill level training requirements: None. Requirements are the same as for active duty Air Force (ADAF) upgrade trainees.

11.3. Additional 7-skill level training requirements: None. Requirements are the same as for ADAF upgrade trainees.

Air National Guard Training Requirements

OPR: ANGRC/SGCT, 3500 Fetchet Ave, Andrews AFB, MD, DSN 278-8559.

12. Purpose: This part of the CFETP applies to **all** 4T0X1s assigned to **all** Air National Guard medical units.

12.1. Additional 3-skill level training requirements: Upon completion of Phase I and Phase II technical training, each medical laboratory apprentice (4T031) will be evaluated by their medical unit commander for an additional 30-60 days of proficiency/seasoning training. This training must be accomplished at an active duty MTF within 1 year of completing Phase II. This training is highly recommended for ANG personnel, who are not in or pursuing, a related civilian occupation. To ensure continuity between resident (Phase I and Phase II) and subsequent clinical (UGT) training, the apprentice will forward a copy of his/her technical school certificate (AF Form 1256) and Student Training Report to their unit of assignment. The ANG unit will then initiate upgrade action using AF Form 2096 to award the 3-skill level and enter the apprentice in the appropriate (TSC) “B” or “F.” This action will begin the 3-month apprenticeship phase while accomplishing MTF proficiency/seasoning training.

12.2. Additional 5-Skill Level Training Requirements: None. Requirements are the same as for ADAF upgrade trainees.

12.3. Additional 7- Skill Level Training Requirements: None. Requirements are the same as for ADAF upgrade trainees.