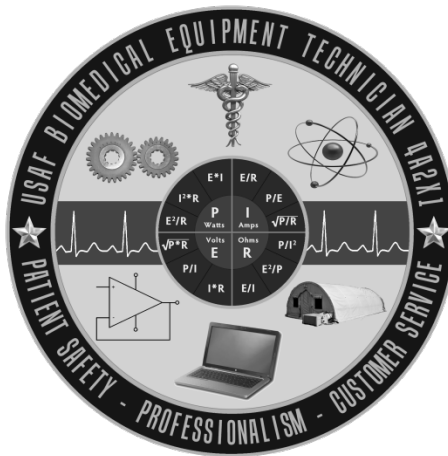


DEPARTMENT OF THE AIR FORCE
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CFETP 4A2X1
Parts I and II
15 January 2017

AFSC 4A2X1
BIOMEDICAL EQUIPMENT TECHNICIAN



CAREER FIELD EDUCATION
AND TRAINING PLAN

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**CAREER FIELD EDUCATION AND TRAINING PLAN
BIOMEDICAL EQUIPMENT TECHNICIAN
AFSC 4A2X1**

TABLE OF CONTENTS

PART I

Preface	1
Abbreviations/Terms Explained	2
Section A, General Information	7
1. Purpose of the CFETP	7
2. Use of the CFETP	7
3. Coordination and Approval	8
Section B, Career Progression and Information	9
1. Specialty Description	9
2. Duties and Responsibilities	9
3. Specialty Qualifications	10
4. Skill/Career Progression	11
Apprentice Level (3)	
Journeyman Level (5)	
Craftsman Level (7)	
Superintendent Level (9)	
5. Training Decisions	11
6. Community College of the Air Force	12
7. Career Field Path	16
Section C, Skill Level Training Requirements	20
1. Purpose	20
2. Specialty Qualification Requirements	20
Apprentice Level (3)	
Journeyman Level (5)	
Craftsman Level (7)	

Superintendent Level (9)

Section D, Resource Constraints	23
--	----

Section E, Transitional Training Guide	24
---	----

Part II

Section A, Specialty Training Standard	25
---	----

Section B, Course Objective List	59
---	----

Section C, Support Materials	60
-------------------------------------	----

Section D, Training Course Index	62
---	----

Section E, MAJCOM Unique Requirements	64
--	----

Section F, Documentation of Training	66
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PART I

PREFACE

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document identifying life-cycle education and training requirements, training support resources, and minimum core task requirements for Biomedical Equipment personnel. The CFETP provides supervisors, trainers, and trainees a clear career path.

2. Civilians occupying associated positions will use Part II to support duty position qualification training. Civilians occupying these positions will be graduates of a DoD Biomedical Equipment Technician (BMET) training program; or be graduates of a formal civilian BMET training program; or have 2 years of field experience as a BMET. Certification as a Certified Biomedical Equipment Technician (CBET) through the AAMI Credentials Institute (ACI), as well as A+, Network+ and Security+ are highly recommended.

3. The CFETP consists of two parts. Supervisors use both parts to plan, manage, and control training within the career field.

3.1. 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 level with specialty qualifications (knowledge, education, training, and other). **Section D** indicates resource constraints (Examples: funds, manpower, equipment, and facilities). **Section E** identifies transition training guide requirements for SSgt through MSgt.

3.2. Part II includes the following: **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 the course objective list and training standards supervisors will use to determine if airmen satisfy training requirements. **Section C** identifies a training course index supervisors can use to determine resources available to support training. Included here are both mandatory and optional courses. **Section D** identifies MAJCOM-unique training requirements supervisors can use to determine additional training required for the associated qualification needs. **Section E** provides guidelines for managing and documenting enlisted training (medical specific). **Section F** provides guidelines and examples of proper documentation of all enlisted medical personnel training.

4. Guidance provided in this CFETP will ensure individuals in this specialty receive effective and efficient training at the appropriate point in their career. This plan will enable leaders to train today's work force for tomorrow's jobs. At the unit level, supervisors and trainers will use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

ABBREVIATIONS/TERMS EXPLAINED

A+: Application Plus

AAMI: Association for the Advancement of Medical Instrumentation

AAS: Associate in Applied Science

ACCE: American College of Clinical Engineering

ACI: AAMI Credentials Institute

Advanced Training. A formal course, training toward a technical or supervisory level Air Force Specialty Code (AFSC). Training is for selected career airmen at the advance level of an AFS.

AETC: Air Education Training Command

AF COOL: Air Force Credentialing Opportunities On-Line

AFECD: Air Force Enlisted Classification Directory

AFSC: Air Force Specialty Code

AFTR: Air Force Training Record

AHA: American Hospital Association

AHA-CC: American Hospital Association Certification Center

Air Education Training Command Training Manager (AETC TM). AETC TMs are responsible for training development, implementation, and management.

Air Education Training Command Training Pipeline Manager (AETC TPM). AETC TPMs are responsible for life-cycle management (planning, directing, implementing, and overseeing) AETC formal training courses. This process begins with basic military training and extends through advanced skills courses. Ensure course-training plans and new course developments are in compliance with AF policy. Chair the portion of the Specialty Training Requirements Team (STRT)/Utilization and Training Workshop (U&TW) addressing training and training resourcing issues.

Air Force Career Field Manager (AFCFM). Use the Utilization and Training Workshop (U&TW)/Specialty Training Requirements Team (STRT) meeting as forums and quality control tools to determine and manage career field E&T requirements. Establish the framework for managing career field E&T by specifying career field progress. Oversee the Career Development Course (CDC) program for assigned AF Specialties. AFCFMs also review CDCs for accuracy and initiate actions to develop new or revised CDCs to meet new requirements.

Chair the portion of the STRT/U&TW for utilization, authorization, and general career field mission issues, and partner with the AETC TPM throughout the STRT/U&TW.

ARC: Air Reserve Component

ASHE: American Society for Hospital Engineering

Biomedical Equipment Technician (BMET). Biomedical Equipment Technician (AFSC 4A2X1).

Career Field Education and Training Plan (CFETP). A CFETP is a comprehensive multipurpose document encapsulating the entire spectrum of training in a specialty. It outlines a logical growth path, including training resources, and is designed to eliminate duplication and make training identifiable and budget defensible.

CBET: Certified Biomedical Equipment Technician

CCAF: Community College of the Air Force

CCE: Certified Clinical Engineer

CDC: Career Development Course

CE: Civil Engineering

CHFM: Certified Healthcare Facility Manager

CHTM: Certified Healthcare Technology Manager

CIC: CCAF Instructor Certification

CLES: Certified Laboratory Equipment Specialist

College of American Pathologists (CAP). CAP is a laboratory accrediting organization. The goal of the CAP Laboratory Accreditation Program is to improve patient safety by advancing the quality of pathology and laboratory services through education, standard setting, and ensuring laboratories meet or exceed regulatory requirements. Upon successful completion of the inspection process, the laboratory is awarded CAP accreditation and becomes part of an exclusive group of more than 7,000 laboratories worldwide that have met the highest standards of excellence.

CompTIA: Computing Technology Industry Association

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

Core Task. Tasks Air Force specialty functional managers identify as minimum qualification requirements within an Air Force specialty regardless of duty position.

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

CRES: Certified Radiology Equipment Specialist

CTS: Course Training Standard

DOD: Department of Defense

DTL: Duty Task List

DSN: Defense Switching Network

Enlisted Specialty Training (EST). 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.

GER: General Education Requirements

HMR: Historical Maintenance Record

HST: Home Station Training

Initial Skills Training. A formal school course that results in the award of a 3-skill level Air Force Specialty Code.

Instructional System Development (ISD). A deliberate and orderly process for planning and developing instructional programs to ensure personnel are taught the knowledge, skills, and attitudes essential for successful job performance.

ITR: Individual Training Record

JBSA: Joint Base San Antonio

JQS: Job Qualification Standard

MAJCOM: Major Command

Master Task List (MTL). The MTL identifies all day-to-day mission (duty position) requirements, core tasks, in-garrison and contingency tasks, and additional duties performed by work center personnel.

Master Training Plan (MTP). At a minimum, it must include the MTL, current CFETP, locally developed or electronic equivalent AF Form 797, Job Qualification Standard (JQS) Continuation Sheet (if applicable), and milestones for tasks and CDC completion (identify the projected timeframe the trainee will complete all required tasks, Home Station Training (HST),

deployment/Unit Type Code (UTC) tasks, and each set of CDCs as required).

Medical Education & Training Campus (METC). Located on Fort Sam Houston, Texas, METC conducts all Basic and Advanced BMET training courses annotated in this CFETP.

Medical Equipment Repair Center (MERC). Medical Equipment Repair Center.

MFM: Major Command Functional Manager

MTF: Medical Treatment Facility.

National Fire Protection Association (NFPA). The NFPA is the worldwide advisor on fire and life safety and protection.

Network+: Network Plus

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

Plan of Instruction (POI). A course control document used for course planning, organization, operation, and validation.

PMC: Professional Manager Certification or Project Management Certification

PMI: Project Management Institute

PMP: Project Management Professional

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

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

Readiness Skills Verification Program (RSVP). A web based software program, which identifies all wartime skill requirements by AFSC and is used as an Air Force Medical Service management tool to ensure contingency skills are sustained.

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

RSNA: Radiological Society of North America

SACS: Southern Association of Colleges and Schools

Security+: Security Plus

SKT: Specialty Knowledge Tests

SME: Subject Matter Expert

Specialty Training Standard (STS). An Air Force publication that describes an Air Force specialty in terms of tasks and knowledge, which an airman in that specialty may be expected to perform or to know on the job. It further serves as a contract between Air Education and Training Command (AETC) and the functional user to show which of the overall training requirements for an Air Force specialty code are taught in formal schools and correspondence courses.

SNCO: Senior Noncommissioned Officer

SOW: Statement of Work

Standard. A fixed quantity or quality. Specified terms such as accuracy, speed, percent/ratio, number of permissible errors and degree of excellence. Standards may reference other directives that identify specific standards such as technical orders.

STRT: Specialty Training Requirements Team

The Joint Commission (TJC). The Joint Commission evaluates and accredits nearly 16,000 health care organizations and programs in the United States. An independent, not-for-profit organization, it has developed state-of-the-art, professionally based standards and evaluated the compliance of health care organizations against these benchmarks. Their mission is to continuously improve the safety and quality of care provided to the public through the provision of health care accreditation and related services that support performance improvement in health care organizations.

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

TR. Training References.

UMD: Unit Manning Document

Upgrade Training (UGT). Training that leads to the award of a higher skill level in an Air Force specialty.

UTC: Unit Type Code

Utilization and Training Workshop (U&TW). A forum that the AFCFM, AETC TPM, AETC TM, MAJCOM Functional Managers (MFM), ARC personnel, and Subject Matter Experts (SME) conduct to identify the education and training needs, develop and review training programs, resolve training or personnel utilization issues, and develop the CFETP for an Air Force Specialty. The CFETP identifies officer and enlisted specialty and civilian

occupation life-cycle education and training requirements by skill level and/or duty position.

UTM: Unit Training Manager

WAPS: Weighted Airman Promotion System

SECTION A, GENERAL INFORMATION

1. Purpose. This CFETP provides information necessary for Air Force Career Field Managers (AFCFMs), MAJCOM Functional Managers (MFM), commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training individuals in the 4A2X1 specialty must 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 AFSC-specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. For our career field, the Medical Education and Training Campus (METC) with the support of the 937th Training Group at Fort Sam Houston, TX provides this training.

1.1. Upgrade training identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for award of the 3-, 5-, 7-, and 9-skill levels. Qualification training 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 upgrade training process. It is designed to provide the performance skills and knowledge required to do the job. Advanced training is formal specialty training used for selected Airmen. Proficiency training is additional training 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. It also, 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 in the specialty, identifies sources of training, and the training delivery method.

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

2. Uses. MFMs and supervisors at all levels will use the plan 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. AETC training personnel and MFMs will also work with the AFCFM to develop acquisition strategies for obtaining resources needed to provide the identified training.

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

2.3. Each individual will complete the mandatory training requirements specified in this program. 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. MAJCOM representatives and AETC training personnel will identify and coordinate on the career field training requirements. The AETC training manager for this specialty will initiate an annual review of this document by AETC and MFMs to ensure currency and accuracy. Using the list of courses in Part II, AETC and MFMs will eliminate duplicate training.

SECTION B, CAREER PROGRESSION AND INFORMATION

1. Specialty Descriptions

1.1. Specialty Summary. Installs, inspects, repairs, and modifies biomedical equipment and support systems. Performs pre-purchase evaluations of medical devices and advises on operational theory, underlying physiological principles, and safe clinical applications of biomedical equipment. Implements organizational maintenance support for all medical devices used within the medical treatment facility (MTF), medical research laboratories, air transportable hospitals and clinics, and contingency hospitals. Provides technical guidance and intermediate maintenance support on medical equipment systems when assigned to a regional Medical Equipment Repair Center (MERC). Directs the facility management program when assigned. Related DoD Occupational Subgroup: 132600.

2. Duties and Responsibilities:

2.1. Assembles, installs, and inspects new biomedical equipment. Assembles equipment and conducts pre-operational tests to verify compliance with medical and technical standards, specifications, contracts, and regulatory guidance. Installs or coordinates the installation of medical equipment that requires interface with other devices or with the facility. Resolves installation and associated maintenance support problems. Performs formal acceptance testing of complex medical equipment and installations such as diagnostic radiology systems and physiological monitoring systems. Performs pre-procurement surveys, and provides technical advice regarding the purchase of new biomedical equipment systems and the required facility interface requirements.

2.2. Inspects, services, and modifies biomedical equipment and support systems. Inspects biomedical equipment systems to determine operational status and compliance with technical standards and specifications. Performs or supervises preventive maintenance tasks such as lubrication; mechanical adjustment; and replacement of filters, tubing, and other parts subject to deterioration. Evaluates user maintenance procedures and ensures safe medical equipment practices are exercised. Instructs and advises personnel in the care and safe, effective use of medical equipment. Calibrates medical equipment according to manufacturers' technical literature, pertinent federal regulations, national standards, state and local laws, and Air Force guidance. Applies electrical, electronic, optical, mechanical, pneumatic, hydraulic, and physiological principles to diagnose and locate system malfunctions. Uses test equipment, technical data, engineering drawings, schematics, and reference materials for troubleshooting and repair of medical equipment. Performs authorized modifications to biomedical equipment.

2.3. Performs safety inspections. Inspects and tests medical and patient-related non-medical equipment for compliance with current safety standards. Inspects and tests supporting utility systems and specialized environment control systems of the medical facility for compliance with electrical and patient safety codes and standards. Identifies deficient equipment, initiates corrective action, and informs personnel of possible safety hazards.

2.4. Performs maintenance management and administrative functions. Develops and directs methods and procedures to be used in the maintenance activity. Determines the type, extent, and feasibility of repairs; and implements repair or condemnation procedures. Performs tasks relating to collecting and recording historical maintenance data. Quality controls reports to ensure accuracy of bench stock balance records and historical maintenance records (HMRs).

Revises preventive maintenance and calibration cycles based on Air Force regulations, manufacturers' literature, and local conditions. Administers the medical equipment warranty and guarantee program. Develops statements of work (SOWs) and manages the medical equipment contract maintenance program. Ensures availability and control of spare parts, test equipment, and tools.

2.5. Manages facility management programs. Senior technicians and superintendents may be assigned as facility managers. Manages safety, resource protection, security, energy conservation, fire protection, communications, housekeeping, and facility maintenance programs. Maintains liaison with base agencies such as civil engineering (CE), communications, and contracting to acquire services for operation and maintenance of the facility, the installed equipment, and utility systems. Coordinates construction, maintenance, and facility alteration projects. Performs quality assurance evaluations of work completed by base agencies and contractors. Supervises maintenance of the hospital environment and housekeeping. Conducts periodic inspections of the MTF and evaluates issues relating to maintenance, safety, fire protection, and disaster planning to ensure compliance with National Fire Protection Association (NFPA) codes and The Joint Commission (TJC) standards. Verifies reimbursements to CE and contractors, and accumulates cost data to support facility budget requests.

3. Specialty Qualification:

3.1. Knowledge. Knowledge is mandatory of physiology; electrical, electronic, mechanical, optical, hydraulic, pneumatic, and radiation principles that apply to biomedical equipment systems; using and interpreting national safety and accrediting standards, blueprints, and Air Force publications; equipment systems application in medicine; and medical safety procedures.

3.2. Education. For entry into this specialty, completion of high school or general educational development equivalency with courses in algebra, trigonometry, mechanics, mechanical theory, general sciences, anatomy, or biology is desirable.

3.3. Training. For award of AFSC 4A231, completion of the basic biomedical equipment maintenance course is mandatory.

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

3.4.1. 4A251. Qualification in and possession of AFSC 4A231. Also, experience in functions such as installing, inspecting, calibrating, modifying, and repairing biomedical equipment support systems.

3.4.2. 4A271. Qualification in and possession of AFSC 4A251. Also, experience supervising functions such as installing, calibrating, repairing, or modifying biomedical equipment systems.

3.4.3. 4A291. Qualification in and possession of AFSC 4A271. Also, experience managing functions such as installing, calibrating, repairing, or modifying biomedical equipment systems.

3.5. Other. The following are mandatory as indicated:

3.5.1. For entry into this specialty:

3.5.1.1. Normal color vision as defined in AFI 48-123, *Medical Examinations and Standards*.

3.5.1.2. A minimum age of 18 years prior to entry into technical training.

3.5.1.3. Additional entry requirements: Must meet minimum aptitude scores in the following areas: Mechanical (M= 60) and Electronic (E-70). Must take a Strength Aptitude by demonstrating weight lift of 50lbs (X=H). Must meet a Physical Profile Assessment of P=2, U=2, L=2, H=3, E=3, S=1.

3.5.2. For award and retention of AFSCs 4A231/51/71/91/00, must maintain an Air Force Network License according to AFI 33-115, Vol 2, *Licensing Network Users and Certifying Network Professionals*.

4. Skill/Career Progression. It is essential that everyone involved in training do their part to plan, develop, manage, conduct, and evaluate an effective training program. The guidance provided in this part of the CFETP will ensure individuals receive viable training at the appropriate points in their career. The following narrative and AFSC 4A2X1 career field flowcharts identify the training career path. It defines the training required in an individual's career.

4.1. Apprentice (3) Level. The specialty consists of the tasks and knowledge training provided in the 3-skill level resident course (L8ABJ4A231 00AA, PDS code U10) located at Fort Sam Houston, Texas, described on the Education and Training Course Announcements website, <https://etca.randolph.af.mil/> . Initial skills training requirements are driven by the Specialty Training Standard (STS). The STS was developed from data collected from the Occupational Survey Report, November 2011. All Individuals must complete the initial skills course to be awarded AFSC 4A231.

4.2. Journeyman (5) Level. This specialty has a 5-skill level awarding Career Development Course (CDC). Qualification at the 5-skill level is awarded only after successful completion of the CDC, on-the-job training, or granted a waiver by the 4A2 Career Field Manager and recommended by the supervisor.

4.3. Craftsman (7) Level. This specialty has a 7-skill level awarding CDC. Qualification of the 7-level is awarded upon successful completion of the CDC, on-the-job training, recommended by the supervisor. Supplemental and commercial courses are desirable. Knowledge of Air Force property, resource protection, and accountability of Air Force property is mandatory. Knowledge of data automation systems procedures is desirable.

4.4. Superintendent (9) Level. To be awarded AFSC 4A291, an individual must be an E-8.

5. Training Decisions. This CFETP includes life cycle training requirements for this specialty. Included in this spectrum is the strategy of when, where, and how to meet these training requirements. The strategy must be apparent and affordable to reduce duplication and eliminate a fragmented approach to training.

5.1. Initial Skills Training. The initial skills course provides training needed to prepare graduates for their first duty station assignment as a Biomedical Equipment Technician Apprentice.

5.2. Upgrade Training. Upgrade training is accomplished through completion of the CDC and continuous on-the-job training. Upgrade training is the responsibility of the trainee, trainer, supervisor, and manager at all levels. Failure to satisfactorily progress is cause for decertification, demotion, and separation from the Air Force.

5.2.1. The 4A251 CDC is designed to educate the Biomedical Equipment Technician Apprentice in biomedical equipment principles and equipment systems.

5.2.2. The 4A271 CDC is designed to educate the Biomedical Equipment Technician Journeyman in various management and supervisory tasks required of the craftsman position.

6. Community College of the Air Force (CCAF). CCAF is one of several federally chartered degree-granting institutions; however, it is the only 2-year institution exclusively serving military enlisted personnel. The college is regionally accredited through Air University by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS) to award Associate in Applied Science (AAS) degrees designed for specific Air Force occupational specialties and is the largest multi-campus community college in the world. Upon completion of basic military training and assignment to an Air Force career field, all enlisted personnel are registered in a CCAF degree program and are afforded the opportunity to obtain an AAS degree. In order to be awarded the degree, personnel must successfully complete the degree requirements before separating, retiring, or is commissioned as an officer. See the CCAF website for details regarding the AAS degree programs at <http://www.au.af.mil/au/barnes/ccaf/catalog/2014cat/index.asp>.

6.1 Degree Requirements: Figure 6.1. is an excerpt from the current CCAF Student Catalog as of the publication date of this CFETP and reflects the minimum degree requirements for an AAS degree. NOTE: The most recent requirements can be found on the CCAF website or through the local education office.

DEGREE PROGRAMS

BIOMEDICAL EQUIPMENT TECHNOLOGY (7GAA)

Occupational Specialty 4A2X1

Degree Requirements The journeyman (5) level must be held at the time of program completion.

Technical Education (24 semester hours)

A minimum of 12 SHs of technical core subjects or courses must be applied and the remaining semester hours applied from technical core or technical elective subjects or courses. Requests to substitute comparable courses or to exceed specified semester hour values in any subject or course must be approved in advance.

Technical Core *Maximum Semester Hours*

Association for the Advancement of Medical Instrumentation Certification	12
Biomedical Equipment Maintenance Management	12
CCAF Internship	18
Diagnostic Support Equipment Systems	12
Diagnostic Support Radiographic Systems	12
Physiological Monitoring Systems	9
Therapeutic Support Equipment Systems	12

Technical Electives *Maximum Semester Hours*

Basic Electronics Theory/Applications	6
Computer Science	6
Digital Techniques	6
Electronic Circuit Design/Analysis	6
Human Anatomy & Physiology	8
Management of Biomedical Equipment Programs	3
Medical Readiness	3
Medical Terminology	3
Microprocessor Technology	6

Leadership, Management & Military Studies

(6 semester hours) Professional military education, civilian management courses accepted in transfer and/or by testing credit. See page 15.

Physical Education (4 semester hours)

General Education (15 semester hours) Applicable courses must meet the criteria for application of courses to the general education requirement and agree with the definitions of applicable courses starting on page 16.

Subjects/Courses *Semester Hours*

Oral Communication	3
Speech	
Written Communication	3
English composition Mathematics	3
Intermediate algebra or a college-level mathematics course satisfying delivering institution's mathematics graduation requirement—if an acceptable mathematics course applies as technical or program elective, you may substitute a natural science course for mathematics	
Social Science	3
Anthropology, archaeology, economics, geography, government, history, political science, psychology, sociology	
Humanities	3
Fine arts (criticism, appreciation, historical significance), foreign language, literature, philosophy, religion	

Program Elective (15 semester hours) Courses applying to technical education, LMMS or general education requirements; natural science courses meeting general education requirement application criteria; foreign language credit earned at Defense Language Institute; maximum 9 SHs of CCAF degree-applicable technical course credit otherwise not applicable to program of enrollment.

See the Professional Credentialing section for information on credentialing and CCAF's Credentialing and Education Research Tool (CERT).

Figure 6.1. 4A2X1 Degree Requirements 2014-2016 CCAF General Catalog)

6.1.1. Technical Education (24 semester hours) A minimum of 12 SHs of technical core subjects or courses must be applied and the remaining semester hours applied from technical core or technical elective subjects or courses. Requests to substitute comparable courses or to exceed specified semester hour values in any subject or course must be approved in advance.

6.1.2. Leadership, Management, and Military Studies (6 Semester Hours): Enlisted Professional Military Education (EPME) and/or civilian management courses.

6.1.3. Physical Education (4 Semester Hours): This requirement is satisfied by completion of Basic Military Training.

6.1.4. 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.

6.1.5. Program Elective (15 semester hours): Courses applying to technical education, LMMS or general education requirements; natural science courses meeting general education requirement application criteria; foreign language credit earned at Defense Language Institute; maximum 9 SHs of CCAF degree-applicable technical course credit otherwise not applicable to program of enrollment.

6.1.6. Residency Requirement (16 Semester Hours): Satisfied by credit earned for coursework completed in an affiliated school or through internship credit awarded for progression in an Air Force occupation specialty. Enlisted members attending Army, Navy, and/or DOD initial or advanced training do not receive resident credit since these schools are not part of the CCAF system. However, the college awards proficiency credit to Air Force enlisted members completing these courses. Note: Physical education credit awarded for basic military training is not resident credit.

6.2. Professional Certifications. Certifications assist the professional development of Airmen by broadening their knowledge and skills. Additionally, specific certifications may be award collegiate credit by CCAF and civilian colleges. To learn more about professional certifications and certification programs offered by CCAF, visit <http://www.au.af.mil/au/barnes/ccaf/certifications.asp>. In addition to its associate degree program, CCAF offers the following certification programs and resources:

6.2.1. CCAF Instructor Certification (CIC) Program. CCAF offers the three-tiered CIC Program for qualified instructors teaching at CCAF affiliated schools who have demonstrated a high level of professional accomplishment. The CIC is a professional credential that recognizes the instructor's extensive faculty development training, education and qualification required to teach a CCAF course, and formally acknowledges the instructor's practical teaching experience.

6.2.2. CCAF Instructional Systems Development (ISD) Certification Program. CCAF offers the ISD Certification Program for qualified curriculum developers and managers who are formally assigned at CCAF affiliated schools to develop and manage CCAF collegiate courses. The ISD Certification is a professional credential that recognizes the curriculum developer's or managers extensive training, education, qualifications and experience required

to develop and manage CCAF courses. The certification also recognizes the individual's ISD qualifications and experience in planning, developing, implementing and managing instructional systems.

6.2.3. CCAF Professional Manager Certification (PMC). CCAF offers the PMC Program for qualified Air Force NCOs. The PMC is a professional credential awarded by CCAF that formally recognizes an individual's advanced level of education and experience in leadership and management, as well as professional accomplishments. The program provides a structured professional development track that supplements Enlisted Professional Military Education (EPME) and CFETP.

6.2.4. Air Force Credentialing Opportunities On-Line (AF COOL). AF COOL replaced the CCAF Credentialing and Education Research Tool (CERT). The AF COOL Program provides a research tool designed to increase an Airman's awareness of national professional credentialing and CCAF educational opportunities available for all Air Force Occupational specialties. AF COOL also provides information on specific occupational specialties, civilian occupational equivalencies, CCAF degree programs, AFSC-related national professional credentials, credentialing agencies, and professional organizations. AF COOL contains a variety of information about credentialing and licensing and can be used to:

- Get background information about civilian licensure and certification in general and specific information on individual credentials including eligibility requirements and resources to prepare for an exam.
- Identify licenses and certifications relevant to an AFSC.
- Learn how to fill gaps between Air Force training and experience and civilian credentialing requirements.
- Get information on funding opportunities to pay for credentialing exams and associated fees.
- Learn about resources available to Airmen that can help them gain civilian job credentials.

6.3. CCAF Instructor Certification (CIC). The CIC is a professional credential that recognizes the instructor's extensive faculty development training, education and qualification required to teach a CCAF course, and formally acknowledges the instructor's practical teaching experience. Qualified officer, enlisted, civilian and other service instructors are eligible for this certification.

6.4. Civilian Certification (*Civilian certification is not mandatory, but highly encouraged*).

6.4.1. Biomedical Certifications. To become a CBET or to specialize as either a Certified Healthcare Technology Manager (CHTM), Certified Radiology Equipment Specialist (CRES) or a Certified Laboratory Equipment Specialist (CLES), contact the ACI for Clinical Engineering and Biomedical Technology, 4301 N. Fairfax Dr, Suite 301, Arlington, VA 22203-1633; (703) 525-4890, ext 1207, or at the website www.aami.org. The ACI also offers a candidacy program that permits course graduates to take the written examination while obtaining the required work experience for full standing as a CBET.

6.4.2. Facility Manager Certifications. For information concerning the Certified Healthcare Facility Manager (CHFM) program, contact the American Hospital Association (AHA) Certification Center (AHA-CC), 155 N. Wacker Dr., Chicago, IL 60606; (312) 422-3000, or at the website. www.aha.org/certifcenter/CHFM/index.shtml.

6.4.3. Computer Systems Certifications. To become certified in a computer systems arena:

6.4.3.1. For A+, Net+ or Security+ certification, contact CompTIA Global Corporate Headquarters, 3500 Lacey Rd, Suite 100, Downers Grove, IL 60515, (630) 678-8300, or visit the website <http://certification.comptia.org/>.

6.4.3.2. For Microsoft certification(s), visit the website <http://www.microsoft.com/learning/en/us/certification/view-by-technology.aspx>.

6.4.4. Clinical Engineer Certification. For information concerning the Certified Clinical Engineer (CCE) program, contact the American College of Clinical Engineering (ACCE), 5200 Butler Pike, Plymouth Meeting, PA 19462-1298, (610) 825-6067, or visit the website <http://www.accenet.org/default.asp?page=cecertification>.

6.4.5. Project Management Certifications. For information concerning the Project Management Professional (PMP) certification, contact the Project Management Institute (PMI), 14 Campus Boulevard, Newton Square, PA 19073-3299, (855) 746-4849, or visit the website <http://www.pmi.org/Certification.aspx>.

7. Career Field Path. A chart depicting this specialty's career path is presented on the next page. The Biomedical Equipment Technician Force Development Pathway, Figure 7-1a and 7-1b, outlines when training is required for each skill level and function within this specialty. The enlisted career path, Table 7-1, presents education and training requirements, average promotion time line, and a chart representing earliest date of rank and high year of tenure dates for ranks Amn and above.

7.1. Career Field Path for Reserve and Guard Members. The enlisted education and training path shadows the active duty requirements for the ranks of SrA and below. The ranks SSgt to MSgt are achieved through the availability of authorized positions on the unit manning document (UMD). Personnel may have the opportunity to receive a promotion one grade above the authorized position designated on the UMD. At this time, there are no authorized positions for the ranks SMSgt and CMSgt or (MSgt for Guard).



Enlisted Force Development

A 30 Year Span

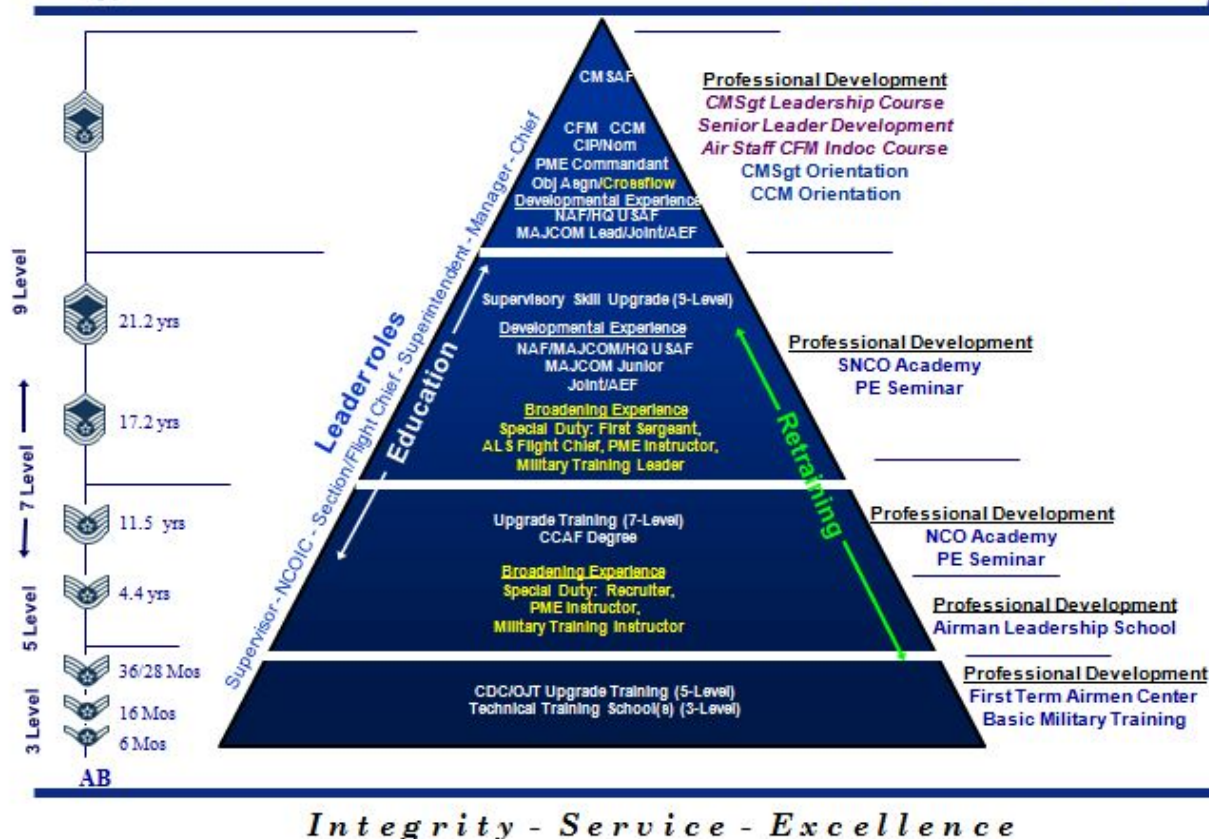


Figure 7-1a. Biomedical Equipment Technician Force Development Pathway



Enlisted Force Development

A 30 Year Span

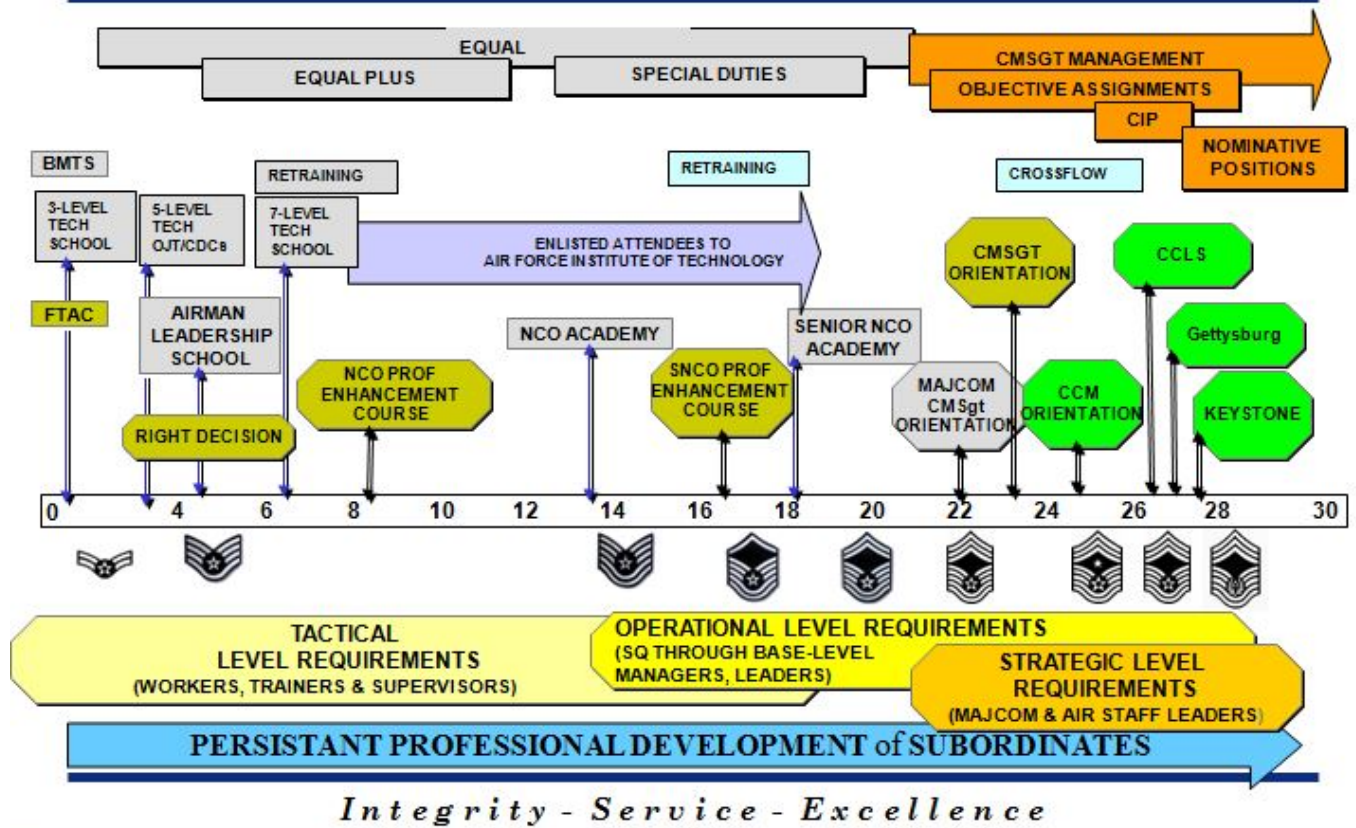


Figure 7-1b. Biomedical Equipment Technician Force Development Pathway

ENLISTED CAREER PATH

Education and Training Requirements	GRADE REQUIREMENTS			
	Rank	Average Sew-On	Earliest Sew-On	High Year Of Tenure (HYT)
Basic Military Training School				
Apprentice Technical School (3-Skill Level)	Amn	6 months 10 months		
Upgrade To Journeyman (5-Skill Level) - Minimum 15 months on-the-job training. - Complete appropriate CDC.	Amn A1C SrA	3 years	28 months	8 Years
Airman Leadership School (ALS) - Must be a SrA with 48 months time in service or be a SSgt selectee. - Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only).	<u>Trainer</u> - Qualified and certified to perform task to be trained - Must attend AF Training Course and be appointed by Commander - Recommended by supervisor.			
Upgrade To Craftsman (7-Skill Level) - Minimum rank of SSgt. - Minimum 12 months OJT. - Complete appropriate CDC.	SSgt	4 years	3 years	15 Years
	<u>Certifier</u> -SSgt with a 5-Skill Level or civilian equivalent. -Attend formal Air Force Training Course. -Be a person other than the training -Be certified on the task to be evaluated.			
Noncommissioned Officer Academy (NCOA) - Must be a TSgt or TSgt selectee. - Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only).	TSgt	9 years	5 years	20 Years
	MSgt	14 years	8 years	24 Years
USAF Senior NCO Academy (SNCOA) - Must be a SMSgt, SMSgt selectee or a MSgt who has been selected to attend based on promotion scores. - Resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only).	SMSgt	17 years	11 years	26 Years
Upgrade To Superintendent (9-Skill Level) - Minimum rank of SMSgt.	CMSgt	22 years	14 years	30 years

Table 7.1. Enlisted Career Path

SECTION C, SKILL LEVEL TRAINING REQUIREMENTS

1. Purpose. Skill levels in this career field are defined in terms of tasks 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.

2. Specialty Qualifications.

2.1. Apprentice Level Training:

2.1.1. Knowledge. Knowledge is mandatory of medical maintenance procedures, general characteristics of biomedical equipment sections, and organization of medical units. Knowledge is desirable of operating automated data processing equipment, test equipment, computer terminals, management, and data automation.

2.1.2. Education. Completion of high school or general educational development equivalency with courses in algebra, trigonometry, mechanics, mechanical theory, general sciences, anatomy, or biology is desirable.

2.1.3. Training. Completion of the basic DOD Biomedical Equipment Technician training program is mandatory for the award of this AFSC.

2.1.4. Other Requirements. Normal color vision, as defined in AFI 48-123, *Medical Examinations and Standards*, is mandatory for entry into this AFSC. Minimum age for duty in and award of this AFSC is 18 years. Other requirements as listed in AFI 36-2101, *Classifying Military Personnel (Officer and Enlisted)*.

2.2. Journeyman Level Training:

2.2.1. Knowledge. Knowledge is mandatory of physiology, electrical, electronic, mechanical, optical, hydraulic, pneumatic, and radiation principles that apply to biomedical equipment and support systems; using and interpreting schematics; technical specification data; accepted national safety and accrediting standards, blueprints, and Air Force publications; equipment systems application in medicine; and medical safety procedures.

2.2.2. Education. Completion is desirable of high school courses in management, algebra, trigonometry, basic electronic data processing, electronics, chemistry, physics, bookkeeping and accounting, and business administration.

2.2.3. Training. Completion of the DOD Biomedical Equipment Technician training program is mandatory. Qualification at the 5-skill level is awarded only after successful completion of the 4A251A and 4A251B CDC and required core task.

2.2.4. Experience. Qualification in and possession of AFSC 4A231. Experience in functions such as installing, inspecting, calibrating, modifying, and repairing biomedical equipment support systems. 15 months of OJT upgrade training is required; 9 months of upgrade training is required for retrainees.

2.3. Craftsman Level Training:

2.3.1. Knowledge. Knowledge is mandatory of biomedical equipment maintenance procedures, general characteristics of biomedical equipment sections, organization of medical units, and maintenance management. A strong background in physiology, electrical, electronic, electromechanical, mechanical, optical, hydraulic, pneumatic, and radiation principles that apply to biomedical equipment support systems; using and interpreting national safety and accrediting standards, blueprints, schematics, and Air Force publications; equipment systems application in medicine; and medical safety procedures. Advanced knowledge is desirable of operating automated data processing equipment, test equipment, computer terminals, computer/systems management, data automation, networks and software.

2.3.2. Education. Completion is desirable of college courses in management, college algebra, basic electronic data processing, electronics, chemistry, physics, bookkeeping and accounting, and business administration. An Associate degree in Biomedical Equipment Technology is highly recommended. Continuing education should be provided through the Association for the Advancement of Medical Instrumentation (AAMI), the Radiological Society of North America (RSNA), through the American Society for Hospital Engineering (ASHE), CompTIA.

2.3.3. Training. Completion of the basic DOD Biomedical Equipment Technician training program is mandatory for the award of this AFSC. Completion of the 4A271 CDC is mandatory. Completion of Air Force supplemental DOD BMET training program advanced/supplemental courses and commercial courses are highly recommended and should be aggressively pursued. Certification through the ACI, CompTIA and computer systems certifications are highly encouraged. **NOTE:** Validate requirements with AFI 36-2201, *Air Force Training Program*

2.3.4. Experience. Qualification is mandatory as a Biomedical Equipment Technician Journeyman. Also, experience is mandatory in performing functions such as installing, calibrating, repairing, or modifying biomedical equipment and support systems. 12 months of OJT upgrade training is required; 6 months of OJT upgrade training is required for retrainees, and the supervisor must recommend the individual for upgrade.

2.4. Superintendent Level Training:

2.4.1. Knowledge. Knowledge is mandatory of biomedical equipment maintenance procedures, general characteristics of biomedical equipment sections, maintenance management, and organization of medical units. A strong knowledge of physiology; electrical, electronic, electromechanical, mechanical, optical, hydraulic, pneumatic, and radiation principles that apply to biomedical equipment systems; using and interpreting national safety and accrediting standards, blueprints, schematics, and Air Force publications; biomedical equipment systems application in medicine; and medical safety procedures. Advanced knowledge is desirable in the operation of automated data processing equipment, test equipment, computer terminals, management, data automation, networks and software.

2.4.2. Education. A CCAF degree is required. Completion of college courses in management, algebra, basic electronic data processing, electronics, chemistry, physics, bookkeeping and accounting, and business administration is desirable. A Bachelor's degree in

related areas of study is highly recommended.

2.4.3. Training. Completion of the DOD Biomedical Equipment Technician training program is mandatory for the award of this AFSC. Completion of a computer repair course is desirable. Completion of Air Force supplemental Biomedical Equipment Technician courses and commercial courses is highly recommended and should be aggressively pursued.

2.4.4. Experience. Qualification is mandatory as a Biomedical Equipment Technician Supervisor and Biomedical Equipment Craftsman. Also, experience is mandatory in managing and directing all biomedical equipment functions.

2.4.5. Other. *Promotion to SMSgt is mandatory.*

2.5. Chief Enlisted Manager (CEM) 4A200. Awarded after promotion to Chief Master Sergeant. A CEM can expect to fill positions such as functional manager at various command levels, squadron superintendent, and flight chief. Additional training in the areas of resources, leadership skills, and management should continue. Completion of higher degree programs is highly recommended.

SECTION D, RESOURCE CONSTRAINTS

1. 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 will be, as a minimum, reviewed and updated annually.

2. Apprentice (3-Level) Training: There are no resource constraints.

3. Journeyman (5-Level) Training: Consolidated storage locations of WRM assets and TDY funding constraints limit access for task certification training.

4. Craftsman (7-Level) Training: There are no resource constraints.

SECTION E, TRANSITIONAL TRAINING GUIDE

Note: There is currently no requirement for a transitional training guide. This area reserved.

PART II

SECTION A, SPECIALTY TRAINING STANDARD

1. Implementation. This STS will be used for technical training provided by METC beginning in or about 1 October 2017.

2. Purpose. As prescribed in AFI 36-2201, *Air Force Training Program*, this STS:

2.1. Lists in column 1 (Task, Knowledge, and Technical Reference) the most common tasks, knowledge, and technical references (TR) necessary for Airman to perform duties in the 3-, 5-, and 7-skill level. Number task statements sequentially i.e., 1.1, 1.2, 2.1. Tasks identified in Column 2a thru 2c identified with an (*) are core tasks for Active, Guard and Reserve personnel in the 3-, 5- and 7-skill level.

2.2. Provides certification for OJT. Columns 3a thru 3e are used to record completion of tasks and knowledge training requirements. Use the automated Air Force Training Record (AFTR) to document technician qualifications.

2.3. Shows formal training and correspondence course requirements. Columns 4a thru 4c show 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 CADRE/AFSC/CDC listing maintained by the unit training manager for current CDC listings.

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

2.5. Documentation. Use the automated system to document all technician qualifications. **NOTE:** An Air Force Job Qualification Standard may be used in lieu of Part II of the CFETP only upon approval of the AFCFM. The AFCFM may supplement these minimum documentation procedures as needed or deemed necessary for their Career Field.

2.5.1. Transcribing a new or revised CFETP. The 4A2X1 AFCFM will provide transcription instructions to the AFTR program manager and field users. This process will be seamless to the field user as all existing trainee records will be auto-transcribed.

2.5.2. 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 the AFECD.

2.5.3. Decertification and Recertification. When an airman is found to be unqualified on a task previously certified for his or her position, the supervisor deletes the previous AFTR documented certification. Appropriate remarks are entered on the AF Form 623A, *On-The-Job Training Record Continuation Sheet* identifying the reason for decertification. Upon subsequent recertification, document AFTR as for any other training qualification.

2.6. Training Standard. Tasks are trained and qualified to the go/no go level. *Go* means the individual can perform the task without assistance and meet accuracy, timeliness, and correct use of procedures.

2.7. The CFETP serves as a guide for development of promotion tests used in the Weighted Airman Promotion System (WAPS). Senior Noncommissioned Officers (SNCO) with extensive practical experience in their career fields develop Specialty Knowledge Tests (SKTs) at the Airman Advancement Division. 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 *Enlisted Promotions Reference and Requirements Catalog*. Individual responsibilities are in AFI 36-2605, *Air Force Military Personnel Testing System*.

3. Recommendations. Identify inadequacies and recommend changes to this training standard through channels to 937 TRG/TGE, 2931 Harney Road, JBSA-Fort Sam Houston, TX 78234 or use the Customer Service Information Line, DSN 420-1080 or Commercial (210) 808-1080 to report your findings.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

MARK A. EDIGER
Lieutenant General, USAF, MC, CFS
Surgeon General

Attachments:
Qualitative Requirements
4A2X1 STS

Block Is For Identification Purposes Only		
Name Of Trainee		
Printed Name (Last, First, Middle Initial)	Initials (Written)	SSAN
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 of the task. (Extremely Limited)
	2	Can do most parts of the task. Needs only help on hardest parts. (Partially Proficient)
	3	Can do all parts of the task. Needs only a spot check of 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	a	Can name parts, tools, and simple facts 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	A	Can identify basic facts and terms about the subject. (Facts)
	B	Can identify relationship 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)
Explanations * 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) ** 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. - This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC. X This mark is used alone in the course columns to show that training is required but not given due to limitations in resources. NOTE: All tasks and knowledge items shown with a proficiency code are trained during war time.		

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
1 CAREER LADDER PROGRESSION TR: AFI 36-2101, Classifying Military Personnel (Officer and Enlisted)														
1.1 The Airmen Career Ladder and Educational Opportunities									-	-	-	B	-	-
1.2 Progression in Career Ladder 4A2X1									-	-	-	B	-	-
1.3 AFSC 4A231, 4A251, 4A271, 4A291, and CEM Code 4A2									A	-	-	B	-	-
1.4 USAF Medical Service									-	-	-	-	-	-
1.4.1 Mission									A	-	-	-	-	-
1.4.2 Organization									A	-	-	-	-	-
1.4.3 Function									A	-	-	-	-	-
2 PROFESSIONAL and PATIENT RELATIONS														
2.1 Professional Relations with Patients, Customers, and Medical Staff									-	-	-	-	-	-
2.2 Professional Standards of Ethics									A	-	-	-	-	-
2.3 Standards of Conduct									A	-	-	-	-	-
3 ELECTRONIC PRINCIPLES and APPLICATIONS TR: Grob's Basic Electronics, 11th; Electronics Fundamentals: Circuits, Devices, and Applications, 8th; Electronics: A Complete Course, 2nd; Electric Circuits Fundamentals, 6th; Microprocessors and Microcontrollers, 1st.														
3.1 Direct Current (DC) Circuits									B	-	-	B	-	-
3.2 Alternating Current (AC) Circuits									B	-	-	B	-	-
3.3 Solid State Devices									B	-	-	B	-	-
3.4 Integrated Circuits/Devices									B	-	-	B	-	-
3.5 Digital Techniques									B	-	-	B	-	-
3.6 Microprocessors									-	-	-	-	-	-
3.6.1 Performance Characteristics									B	-	-	B	-	-
3.6.2 Isolate Malfunctions									-	-	-	-	-	-
3.7 Motors									B	-	-	B	-	-
4 BIOMEDICAL PRINCIPLES TR: Gray's Anatomy for Students, 3rd; Human Anatomy, 7th; Biomedical Transducers and Instruments, 1st; Medical Instrumentation Application and Design, 4th; Introduction to Biomedical Engineering Technology, 2nd; Biomedical Device Technology: Principles and Design, 1st.														
4.1 Anatomy and Physiology									B	-	-	B	-	-
4.2 Medical Terminology									A	-	-	A	-	-
4.3 Applications of Transducers									B	-	-	B	-	-
4.4 Applications of Electrodes									B	-	-	B	-	-
5 PHYSICS PRINCIPLES APPLICABLE to BIOMEDICAL EQUIPMENT MAINTENANCE TR: Introduction to Biological Physics for the Health and Life Sciences, 1st; Essentials of Ultrasound Physics, 1st; A Practicum for Biomedical Engineering & Technology														

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level		5 Skill Level		7 Skill Level	
	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
Management Issues, 1st.														
5.1 Hydraulic									B	-	-	B	-	-
5.2 Mechanical									B	-	-	B	-	-
5.3 Optical									B	-	-	B	-	-
5.4 Pneumatic									B	-	-	B	-	-
5.5 Radiation									B	-	-	B	-	-
5.6 Acoustics									B	-	-	B	-	-
5.7 Light Amplification by Stimulated Emission of Radiation (LASER)									B	-	-	B	-	-
5.8 Ultrasound									B	-	-	B	-	-
5.9 Steam									B	-	-	B	-	-
5.10 Electromagnetic Emissions									B	-	-	B	-	-
6 FACILITY/EQUIPMENT INTERFACE TR: NFPA 70, NFPA 99, NFPA 101, IEEE 602, UL 943, UL 1022, UL 1436, UFC 4-510-01														
6.1 Electrical Distribution System									-	-	-	-	-	-
6.1.1 Single Phase									B	-	-	B	-	-
6.1.2 Three Phase									B	-	-	B	-	-
6.1.3 Isolated									B	-	-	B	-	-
6.1.4 Emergency									B	-	-	B	-	-
6.1.5 Grounding									B	-	-	B	-	-
6.1.6 Protective Devices									B	-	-	B	-	-
6.1.7 Transformers									B	-	-	B	-	-
6.1.8 Wire Sizing									B	-	-	B	-	-
6.2 Vacuum Systems									B	-	-	B	-	-
6.3 Central Gas Systems									B	-	-	B	-	-
6.4 Plumbing									B	-	-	B	-	-
6.5 Environmental Control Systems									A	-	-	B	-	-
6.6 Structural Requirements									A	-	-	B	-	-
6.7 Architectural and Engineering Drawings									A	-	-	B	-	-
7 OCCUPATIONAL SAFETY and HEALTH (OSHA) PROGRAM TR: AFI 91-203, AFI 91-202, AFI 41-201, AFPD 91-2, OSHA Publications, Food and Drug Administration (FDA), ECRI, Air Force Medical Logistics Office (AFMLO); Defense Supply Center Philadelphia (DSCP), NFPA 30, NFPA 53, NFPA 99, NFPA 101, Center for Disease Control (Guidelines for Environmental Infection Control in Health-Care Facilities), IEC 60601-1, IEC 62353, ANSI/AAMI HA60601-1-11, NFPA Fire Protection Guide to Hazardous Materials, ANSI Z136.1, ANSI Z136.3, AFI 48-139, NFPA 70, NFPA 77, NCRP 102, NCRP 105, NCRP 107, AFOSH Standard 48-20, CGA C-6, CGA E-7, CGA P-1, CGA V-5, CGA P-2														
7.1 Principles of General Safety									B	-	-	B	-	B
7.2 Safety Precautions									B	-	-	B	-	B
7.3 Accident Reporting									A	-	-	B	-	B
7.4 Hazard Reporting									A	-	-	B	-	B

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
7.5 Safety Practices Pertaining to:									-	-	-	-	-	-
7.5.1 Biological Hazards									A	-	-	B	-	-
7.5.2 Chemical Hazards									A	-	-	B	-	-
7.5.3 Fire Hazards									A	-	-	B	-	-
7.5.4 LASER Hazards									A	-	-	B	-	-
7.6 Hazards Associated with Equipment and its Interface									-	-	-	-	-	-
7.6.1 Electrical Shock									B	-	-	B	-	-
7.6.2 Ionizing Radiation									B	-	-	B	-	-
7.6.3 Flammable Gas									B	-	-	B	-	-
7.6.4 Compressed Gas									B	-	-	B	-	-
7.6.5 Noise									B	-	-	B	-	-
7.6.6 Occupationally Hazardous Gases									B	-	-	B	-	-
7.6.7 Inhalation Anesthetizing Location									B	-	-	B	-	-
7.6.8 Mechanical									B	-	-	B	-	-
7.6.9 Batteries									B	-	-	B	-	-
7.6.10 Thermal									A	-	-	A	-	-
7.6.11 Lockout/Tagout Program									-	-	-	-	-	-
7.6.11.1 Perform Lockout/Tagout Procedures									1a	-	-	c	-	-
7.6.11.2 Lockout/Tagout Program Management									-	-	-	B	-	-
8 TOOLS, HARDWARE, TEST EQUIPMENT and TECHNIQUES TR: AFI 91-203, TO 32-1-101, TO 00-25-234, Manufacturer's Literature, AAMI Electrical Safety Manual-2015														
8.1 Use Hand Tools									2b	-	-	b	-	-
8.2 Use Power Tools									2b	-	-	b	-	-
8.3 Use Electronic Measurement Instruments									-	-	-	-	-	-
8.3.1 Oscilloscope to									-	-	-	-	-	-
8.3.1.1 Analyze Waveforms		*							2b	-	-	c	-	-
8.3.1.2 Measure Voltage		*							2b	-	-	c	-	-
8.3.1.3 Measure Frequency		*							2b	-	-	c	-	-
8.3.2 Multimeter to Measure									-	-	-	-	-	-
8.3.2.1 Voltage		*							2b	-	-	c	-	-
8.3.2.2 Current		*							2b	-	-	c	-	-
8.3.2.3 Resistance		*							2b	-	-	c	-	-
8.4 Use Medical Test Equipment									-	-	-	-	-	-
8.4.1 Defibrillator Analyzer		*							2b	-	-	c	-	-
8.4.2 Infusion Pump Analyzer		*							2b	-	-	c	-	-
8.4.3 Blood Pressure Analyzer		*							2b	-	-	c	-	-
8.4.4 Electrosurgical Analyzer		*							2b	-	-	c	-	-
8.4.5 Non-invasive X-ray Test Equipment		*							2b	-	-	c	-	-
8.4.6 Imaging Phantoms									2b	-	-	b	-	-
8.4.7 Pulse Oximetry Simulator		*							2b	-	-	c	-	-
8.4.8 Network Analyzer									2b	-	-	b	-	-
8.4.9 Gas Analyzers									2b	-	-	b	-	-
8.4.10 Multiparameter Patient Simulator		*							2b	-	-	c	-	-
8.4.11 Ultrasound Wattmeter									2b	-	-	b	-	-

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
8.4.12 Electrical Safety Analyzer		*							2b	-	-	c	-	-
8.4.13 Ventilator Tester									2b	-	-	b	-	-
8.4.14 Diagnostic Monitor Photometer									1a	-	-	b	-	-
8.4.15 Gas Flow Analyzer									2b	-	-	b	-	-
8.4.16 Manometer		*							2b	-	-	c	-	-
8.4.17 Tachometer		*							2b	-	-	c	-	-
8.4.18 Dynamometer									-	-	-	-	-	-
8.5 Measure									-	-	-	-	-	-
8.5.1 Pressure									2b	-	-	-	-	-
8.5.2 Temperature									2b	-	-	-	-	-
8.5.3 Flow Rate									2b	-	-	-	-	-
8.5.4 Revolutions per Minute (RPM)									2b	-	-	-	-	-
8.5.5 Volume									2b	-	-	-	-	-
8.6 Repair/Replace									-	-	-	-	-	-
8.6.1 Solder Electronics									2b	-	-	b	-	-
8.6.2 Plumbing Connections									-	-	-	-	-	-
8.6.2.1 Mechanical									2b	-	-	b	-	-
8.6.2.2 Soldered									2b	-	-	b	-	-
8.6.3 Replace Hardware/Subassemblies									2b	-	-	-	-	-
8.7 Perform Electrical Safety Inspection		*							2b	-	-	c	-	-
8.8 General Troubleshooting Techniques									B	-	-	B	-	-
8.9 General Preventive Maintenance Techniques									B	-	-	B	-	-
9 PUBLICATION MANAGEMENT TR: Air Force e-Publishing (www.e-publishing.af.mil)									-					
9.1 DOD Publications									-	-	-	A	-	B
9.2 Commercial Publications									-	-	-	A	-	B
9.3 National Fire Protection Association (NFPA) Guidance									B	-	-	B	-	-
9.4 Food and Drug Administration (FDA) Guidance									-	-	-	B	-	B
9.5 Local Guidance									-	-	-	A	-	B
10 MEDICAL MATERIEL PROCEDURES TR: AFI 41-201, AFI 41-209, AFI 64-117														
10.1 Air Force Accountability and Responsibility									A	-	-	B	-	B
10.2 Manage Parts									1a	-	-	b	-	-
10.3 Acquisition Methods									-	-	-	-	-	-
11 MAINTENANCE ADMINISTRATION TR: AFI 41-201, AFI 23-101, AFI 41-209														
11.1 Document Maintenance Actions		*							1b	-	-	b	-	-
11.2 Maintain Technical Reference Files		*							-	-	-	b	-	-
11.3 Maintain Equipment Data Files		*							1b	-	-	b	-	-
12 MEDICAL EQUIPMENT CONTROL TR: AFI 41-201; AFI 41-209; A Practicum for Biomedical Engineering & Technology Management Issues, 1st.; Clinical Engineering Handbook, 1st., FDAMA (http://www.fda.gov/MedicalDevices/Devi														

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
ceRegulationandGuidance/GuidanceDocuments/ucm071756.htm)														
12.1 Equipment Acquisition									-	-	-	-	-	-
12.1.1 Evaluate Equipment Requests			*						-	-	-	b	-	c
12.1.2 Plan Equipment Installation									-	-	-	b	-	c
12.1.3 Execute Equipment Installation									-	-	-	b	-	c
12.1.4 Perform Acceptance Inspection		*							2b	-	-	b	-	b
12.2 Quality Assurance									-	-	-	-	-	-
12.2.1 Formulate Equipment Modifications			*						-	-	-	b	-	c
12.2.2 Perform Equipment Modifications									-	-	-	-	-	-
12.2.3 Initiate Medical Materiel Complaints			*						-	-	-	b	-	c
12.2.4 Manage Hazard Notices		*							-	-	-	b	-	c
12.2.5 Assign Condition Codes									2b	-	-	b	-	-
12.2.6 Perform Quality Assurance Check									-	-	-	b	-	-
12.2.7 Food and Drug Administration Modernization Act (FDAMA) of 1997									A	-	-	B	-	B
12.2.8 Perform Incident Investigations			*						-	-	-	b	-	c
12.3 Recommend Equipment Replacement			*						-	-	-	b	-	c
12.4 Perform Equipment Disposition		*							-	-	-	b	-	-
13 MAINTENANCE MANAGEMENT FUNCTIONS TR: AFI 41-201; AFI 38-201; AFI 38-204; AFI 41-209; AFMAN 41-216; A Practicum for Biomedical Engineering & Technology Management Issues, 1st.; Clinical Engineering Handbook, 1st.; Joint Commission (http://www.jointcommision.org/); College of American Pathologists (http://www.cap.org/accreditation)														
13.1 Organizational Structure of the Air Force Biomedical Equipment Maintenance Program									A	-	-	B	-	-
13.2 Responsibility of the Clinical Engineer Branch of the Air Force Medical Logistics Office (AFMLO)									A	-	-	B	-	-
13.3 Duties and Responsibilities of Medical Equipment Repair Centers (MERC)									A	-	-	B	-	-
13.4 Duties and Responsibilities of Medical Equipment Management Offices (MEMO)									-	-	-	B	-	-
13.5 Technology Management									-	-	-	-	-	-
13.6 War Reserve Materiel (WRM) Maintenance Program									-	-	-	B	-	B
13.7 Patient Movement Item (PMI) Maintenance Program									-	-	-	B	-	B
13.8 Organizational Maintenance									-	-	-	B	-	B
13.9 Planning									-	-	-	-	-	-
13.9.1 Work Assignments									-	-	-	B	-	B
13.9.2 Work Priorities									-	-	-	B	-	B

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
13.10 Establishing									-	-	-	-	-	-
13.10.1 Performance Standards									-	-	-	B	-	B
13.10.2 Metrics									-	-	-	B	-	B
13.11 Determining Requirements									-	-	-	-	-	-
13.11.1 Manpower									-	-	-	A	-	B
13.11.2 Tools and Test Equipment									-	-	-	A	-	B
13.11.3 Maintenance Facilities									-	-	-	-	-	A
13.11.4 Financial Plan (Budget)									-	-	-	A	-	B
13.12 Contract Maintenance Management									-	-	-	-	-	-
13.12.1 Determine Requirements for Contract Maintenance									-	-	-	b	-	b
13.12.2 Monitor Contract Maintenance									-	-	-	b	-	-
13.13 Assessments									-	-	-	-	-	-
13.13.1 Military									-	-	-	-	-	-
13.13.1.1 Perform Self Inspection		*							-	-	-	b	-	-
13.13.1.2 Staff Assistance Visits (SAVs)/Management Assistance Visits (MAVs)									-	-	-	A	-	-
13.13.2 Civilian									-	-	-	-	-	-
13.13.2.1 The Joint Commission (TJC)									-	-	-	A	-	B
13.14 Defense Medical Logistics Standard Support (DMLSS) Actions									-	-	-	-	-	-
13.14.1 Process Work Order		*							2b	-	-	-	-	-
13.14.2 Workload Management									-	-	-	B	-	-
13.14.3 Manage Parts									2b	-	-	-	-	-
13.14.4 Document Contract Services									-	-	-	a	-	b
13.14.5 Data Quality									-	-	-	B	-	-
13.15 Business Objects									-	-	-	-	-	-
14 READINESS TR: AFI 41-106; TO 35CA6-1-101; TO 35CA2-2-10-1; TO 35C2-3-519-1; TO 35E51-101; TO 35E4-177-1; T.O. 35E9-314-1; AFH 10-222; AFI 10-2909; TO EDOCS-120-3K-1; AFI 41-209; Manufacturer's Literature														
14.1 Deployable Medical Systems									-	-	-	-	-	-
14.1.1 Medical Resource Letter									-	-	-	A	-	-
14.1.2 Mission Capability Statement									-	-	-	A	-	-
14.1.3 Concept of Operation									-	-	-	B	-	-
14.2 Tactical/Mobile Electrical Systems									-	-	-	-	-	-
14.2.1 Power Distribution Systems									-	-	-	-	-	-
14.2.1.1 System Application									A	-	-	B	-	-
14.2.1.2 Perform Operational Inspection									2b	-	-	b	-	-
14.2.1.3 Perform Organizational Maintenance									a	-	-	b	-	-
14.2.1.4 Install									2b	-	-	b	-	-
14.2.2 Power Production (Generators)									-	-	-	-	-	-
14.2.2.1 System Application									B	-	-	B	-	-
14.2.2.2 Perform Operational Inspection									2b	-	-	b	-	-
14.2.2.3 Perform Organizational									a	-	-	b	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Maintenance														
14.2.2.4 Install									2b	-	-	b	-	-
14.2.3 Lighting Systems									-	-	-	-	-	-
14.2.3.1 System Application									A	-	-	-	-	-
14.2.3.2 Perform Operational Inspection									a	-	-	-	-	-
14.2.3.3 Perform Organizational Maintenance									a	-	-	-	-	-
14.2.3.4 Install									a	-	-	-	-	-
14.3 Tactical Shelters									-	-	-	-	-	-
14.3.1 DOD ISO Expandable Shelter									-	-	-	-	-	-
14.3.1.1 System Application									A	-	-	A	-	-
14.3.1.2 Perform Operational Inspection									1a	-	-	-	-	-
14.3.1.3 Perform Organizational Maintenance									1a	-	-	-	-	-
14.3.1.4 Install									a	-	-	b	-	-
14.3.1.5 Prepare for Shipment									-	-	-	b	-	-
14.3.1.6 Prepare Site									a	-	-	b	-	-
14.3.2 Tentage									-	-	-	-	-	-
14.3.2.1 System Application									A	-	-	B	-	-
14.3.2.2 Collectively Protected Versions									A	-	-	B	-	-
14.3.2.3 Perform Organizational Maintenance									a	-	-	-	-	-
14.3.2.4 Install									-	-	-	b	-	-
14.3.2.5 Prepare for Shipment									-	-	-	b	-	-
14.3.2.6 Prepare Site									a	-	-	b	-	-
14.4 Environmental Control Units (ECU)									-	-	-	-	-	-
14.4.1 System Application									A	-	-	B	-	-
14.4.2 Collectively Protected Versions									A	-	-	B	-	-
14.4.3 Perform Operational Inspection									1a	-	-	b	-	-
14.4.4 Perform Organizational Maintenance									1a	-	-	b	-	-
14.4.5 Install									1a	-	-	b	-	-
14.5 Oxygen Storage and Generation Systems									-	-	-	-	-	-
14.5.1 Oxygen Concentration System									-	-	-	-	-	-
14.5.1.1 System Application									B	-	-	B	-	-
14.5.1.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
14.5.1.3 Perform Calibration/Verification									-	-	-	b	-	-
14.5.1.4 Isolate Malfunctions									2b	-	-	-	-	-
14.5.1.5 Install									a	-	-	b	-	-
14.5.1.6 Common Malfunctions									-	-	-	B	-	-
14.5.2 Oxygen Storage System									-	-	-	-	-	-
14.5.2.1 System Application									B	-	-	B	-	-
14.5.2.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
14.5.3 Liquid Oxygen System									-	-	-	-	-	-
14.5.3.1 System Application									B	-	-	B	-	-
14.5.3.2 Perform Organizational									a	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Maintenance														
14.6 Field Communications Equipment									-	-	-	-	-	-
14.6.1 System Application									-	-	-	-	-	-
14.6.2 Perform Operational Inspection									-	-	-	-	-	-
14.6.3 Perform Organizational Maintenance									-	-	-	-	-	-
14.6.4 Install									-	-	-	-	-	-
14.7 Prepare Equipment for War Reserve Materiel (WRM) Storage									a	-	-	b	-	-
14.8 Water Recovery System									-	-	-	-	-	-
14.8.1 System Application									A	-	-	-	-	-
14.8.2 Perform Preventive Maintenance									-	-	-	-	-	-
14.8.3 Install									-	-	-	-	-	-
14.9 Field Diagnostic Radiographic System (Fixed)									-	-	-	-	-	-
14.9.1 Clinical Applications									-	-	-	-	-	-
14.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
14.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
14.9.4 Isolate Malfunctions									-	-	-	-	-	-
14.9.5 Install									-	-	-	-	-	-
14.10 Field Dental Operating System									-	-	-	-	-	-
14.10.1 Clinical Applications									-	-	-	-	-	-
14.10.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
14.10.3 Isolate Malfunctions									-	-	-	-	-	-
14.10.4 Install									-	-	-	-	-	-
14.11 Frequency Converter									-	-	-	-	-	-
14.11.1 System Application									B	-	-	-	-	-
14.11.2 Perform Operational Inspection									b	-	-	-	-	-
14.12 Wound Therapy Unit									-	-	-	-	-	-
14.12.1 Clinical Application									-	-	-	-	-	-
14.12.2 Perform Preventive Maintenance									-	-	-	-	-	-
14.12.3 Perform System Calibration/Verification									-	-	-	-	-	-
14.12.4 Isolate Malfunction									-	-	-	-	-	-
14.13 Transport Ventilator									-	-	-	-	-	-
14.13.1 Clinical Application									B	-	-	-	-	-
14.13.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
14.13.3 Perform System Calibration/Verification									-	-	-	-	-	-
14.13.4 Isolate Malfunction									-	-	-	-	-	-
15 THERAPEUTIC EQUIPMENT SYSTEMS TR: Manufacturer's Literature; ANSI/AAMI EQ 56, Recommended Practice for a Medical Equipment Management Program; ECRI Biomedical Benchmark; ECRI Health									-					

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Devices System; NFPA 99; AFI 41-201; 21 CFR Chapter I; ANSI/ADA 44; ANSI/ADA 47; ANSI/ADA 94; AAMI IEC 60601-2-2; ISO 80601-2-13; ISO 80601-2-12 ; ISO 10651-3; ANSI/AAMI/IEC 60601-2-20; ANSI/AAMI/IEC 60601-2-19; ANSI/AAMI/IEC 60601-2-21; IEC 60601-2-4; IEC 60601-2-52; IEC 60601-2-22; ANSI Z136.3; IEC 60601-2-16; ANSI/AAMI AT6; IEC 60601-2-10; ANS/ISO10079.1														
15.1 Dental Operating Systems									-	-	-	-	-	-
15.1.1 Clinical Application									A	-	-	B	-	-
15.1.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
15.1.3 Isolate Malfunctions									2b	-	-	-	-	-
15.1.4 Install									b	-	-	-	-	-
15.1.5 Maintain Dental Compressor Systems									2b	-	-	b	-	-
15.1.6 Dental Hand Pieces									-	-	-	-	-	-
15.1.6.1 Clinical Applications									-	-	-	-	-	-
15.1.6.2 Maintenance/Repair									-	-	-	-	-	-
15.2 Ultrasonic Therapy Units									-	-	-	-	-	-
15.2.1 Clinical Application									A	-	-	B	-	-
15.2.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
15.2.3 Perform System Calibration/Verification									2b	-	-	-	-	-
15.2.4 Isolate Malfunctions									2b	-	-	-	-	-
15.3 Electrosurgical Systems									-	-	-	-	-	-
15.3.1 Clinical Application									A	-	-	B	-	-
15.3.2 Perform Preventive Maintenance Inspection		*							2b	-	-	b	-	-
15.3.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
15.3.4 Isolate Malfunctions									2b	-	-	-	-	-
15.4 Anesthesia Systems									-	-	-	-	-	-
15.4.1 Clinical Application									A	-	-	B	-	-
15.4.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
15.4.3 Perform System Calibration/Verification									2b	-	-	-	-	-
15.4.4 Isolate Malfunctions									2b	-	-	-	-	-
15.5 Ventilator									-	-	-	-	-	-
15.5.1 Clinical Application									A	-	-	B	-	-
15.5.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
15.5.3 Perform System Calibration/Verification									2b	-	-	-	-	-
15.5.4 Isolate Malfunctions									2b	-	-	-	-	-
15.6 Dental Ultrasonic Prophylaxis									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
15.6.1 Clinical Application									A	-	-	B	-	-
15.6.2 Perform Operational Inspection									2b	-	-	b	-	-
15.6.3 Isolate Malfunctions									2b	-	-	-	-	-
15.7 Pneumatic Tourniquets									-	-	-	-	-	-
15.7.1 Clinical Application									-	-	-	B	-	-
15.7.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.7.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.7.4 Isolate Malfunctions									-	-	-	-	-	-
15.8 Infant Incubators									-	-	-	-	-	-
15.8.1 Clinical Application									A	-	-	B	-	-
15.8.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
15.8.3 Perform System Calibration/Verification									1a	-	-	-	-	-
15.8.4 Isolate Malfunctions									2b	-	-	-	-	-
15.9 Infant Care Centers									-	-	-	-	-	-
15.9.1 Clinical Application									-	-	-	B	-	-
15.9.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
15.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.9.4 Isolate Malfunctions									-	-	-	-	-	-
15.10 Infusion Devices									-	-	-	-	-	-
15.10.1 Clinical Application									A	-	-	B	-	-
15.10.2 Perform Preventive Maintenance Inspection		*							2b	-	-	b	-	-
15.10.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
15.10.4 Isolate Malfunctions									2b	-	-	-	-	-
15.11 Patient Warming/Cooling Systems									-	-	-	-	-	-
15.11.1 Clinical Application									A	-	-	B	-	-
15.11.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
15.11.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.11.4 Isolate Malfunctions									2b	-	-	-	-	-
15.12 Defibrillator									-	-	-	-	-	-
15.12.1 Clinical Application									A	-	-	B	-	-
15.12.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
15.12.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
15.12.4 Isolate Malfunctions									2b	-	-	-	-	-
15.12.5 Maintain Battery Support Systems									-	-	-	-	-	-
15.13 Electric Beds									-	-	-	-	-	-
15.13.1 Clinical Application									-	-	-	-	-	-
15.13.2 Perform Preventive Maintenance									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Inspection														
15.13.3 Isolate Malfunctions									-	-	-	-	-	-
15.14 Multi-Gas Monitors (Anesthesia)									-	-	-	-	-	-
15.14.1 Clinical Application									-	-	-	B	-	-
15.14.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
15.14.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.14.4 Isolate Malfunctions									-	-	-	-	-	-
15.15 Medical LASER Systems									-	-	-	-	-	-
15.15.1 Clinical Application									A	-	-	B	-	-
15.15.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.15.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.15.4 Isolate Malfunctions									-	-	-	-	-	-
15.15.5 Install									-	-	-	-	-	-
15.16 Dialysis Machines									-	-	-	-	-	-
15.16.1 Clinical Applications									-	-	-	A	-	-
15.16.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.16.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.16.4 Isolate Malfunction									-	-	-	-	-	-
15.17 Blood/Fluid Warmer									-	-	-	-	-	-
15.17.1 Clinical Applications									A	-	-	B	-	-
15.17.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
15.17.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.17.4 Isolate Malfunctions									2b	-	-	-	-	-
15.18 Sequential Compression Devices									-	-	-	-	-	-
15.18.1 Clinical Applications									-	-	-	B	-	-
15.18.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.18.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.18.4 Isolate Malfunctions									-	-	-	-	-	-
15.19 Neuromuscular Stimulator									-	-	-	-	-	-
15.19.1 Clinical Applications									-	-	-	B	-	-
15.19.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.19.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.19.4 Isolate Malfunctions									-	-	-	-	-	-
15.20 Phototherapy Systems									-	-	-	-	-	-
15.20.1 Clinical Application									-	-	-	-	-	-
15.20.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
15.20.3 Perform Calibration/Verification									-	-	-	-	-	-
15.20.4 Isolate Malfunction									-	-	-	-	-	-
15.21 Linear Particle Accelerator (LINAC)									-	-	-	-	-	-
15.21.1 Clinical Applications									-	-	-	-	-	-
15.21.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.21.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.21.4 Isolate Malfunctions									-	-	-	-	-	-
15.22 Phacoemulsification Unit									-	-	-	-	-	-
15.22.1 Clinical Applications									-	-	-	-	-	-
15.22.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
15.22.3 Perform System Calibration/Verification									-	-	-	-	-	-
15.22.4 Isolate Malfunctions									-	-	-	-	-	-
16 THERAPEUTIC SUPPORT EQUIPMENT TR: Manufacturer's Literature; ANSI/AAMI EQ 56, Recommended Practice for a Medical Equipment Management Program; ECRI Biomedical Benchmark; ECRI Health Devices System; NFPA 99; AFI 41-201; 21 CFR Chapter I; ANSI/AAMI ST8; ANSI/AAMI ST58; ANSI/ADA 48; ISO 15883-1														
16.1 Suction/Pressure Units									-	-	-	-	-	-
16.1.1 Clinical Application									A	-	-	B	-	-
16.1.2 Perform Preventive Maintenance Inspection		*							2b	-	-	b	-	-
16.1.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
16.1.4 Isolate Malfunctions									2b	-	-	-	-	-
16.2 Sterilizers									-	-	-	-	-	-
16.2.1 Steam Sterilizers									-	-	-	-	-	-
16.2.1.1 Clinical Application									A	-	-	B	-	-
16.2.1.2 Perform Preventive Maintenance Inspection		*							2b	-	-	b	-	-
16.2.1.3 Perform System Calibration/Verification									2b	-	-	b	-	-
16.2.1.4 Isolate Malfunctions									2b	-	-	-	-	-
16.2.1.5 Install									-	-	-	-	-	-
16.2.1.6 Steam Generator									-	-	-	-	-	-
16.2.1.6.1 Perform Preventive Maintenance Inspection									-	-	-	a	-	-
16.2.1.6.2 Isolate Malfunctions									-	-	-	-	-	-
16.2.2 Plasma Sterilizers									-	-	-	-	-	-
16.2.2.1 Clinical Application									A	-	-	B	-	-
16.2.2.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
16.2.2.3 Perform System Calibration/Verification									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
16.2.2.4 Isolate Malfunctions									-	-	-	-	-	-
16.2.2.5 Install									-	-	-	-	-	-
16.3 Water Purification Systems									-	-	-	-	-	-
16.3.1 Clinical Application									-	-	-	B	-	-
16.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.3.3 Isolate Malfunctions									-	-	-	-	-	-
16.3.4 Install									-	-	-	-	-	-
16.4 Ultrasonic Cleaners									-	-	-	-	-	-
16.4.1 Clinical Application									A	-	-	B	-	-
16.4.2 Perform Preventive Maintenance Inspection									a	-	-	-	-	-
16.4.3 Isolate Malfunctions									-	-	-	-	-	-
16.5 Dental Laboratory Equipment									-	-	-	-	-	-
16.5.1 Clinical Applications of Dental Laboratory Equipment									-	-	-	B	-	-
16.5.2 Dental Curing Unit									-	-	-	-	-	-
16.5.2.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.2.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.2.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.3 Porcelain Furnace									-	-	-	-	-	-
16.5.3.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.3.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.3.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.4 Dental Casting Machine									-	-	-	-	-	-
16.5.4.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.4.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.4.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.5 Dental Shell/Sandblaster									-	-	-	-	-	-
16.5.5.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.5.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.5.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.6 Dental Lathe									-	-	-	-	-	-
16.5.6.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.6.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.6.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.7 Dental Model Trimmer									-	-	-	-	-	-
16.5.7.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
16.5.7.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.7.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.8 Dental Dust Collectors									-	-	-	-	-	-
16.5.8.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.8.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.8.3 Isolate Malfunctions									-	-	-	-	-	-
16.5.9 Amalgamators									-	-	-	-	-	-
16.5.9.1 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.5.9.2 Perform System Calibration/Verification									-	-	-	-	-	-
16.5.9.3 Isolate Malfunctions									-	-	-	-	-	-
16.6 Surgical Tables									-	-	-	-	-	-
16.6.1 Clinical Applications									-	-	-	-	-	-
16.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.6.3 Isolate Malfunction									-	-	-	-	-	-
16.7 Washer/Disinfectors									-	-	-	-	-	-
16.7.1 Clinical Application									A	-	-	B	-	-
16.7.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
16.7.3 Perform Calibration/Verification									2b	-	-	b	-	-
16.7.4 Isolate Malfunction									2b	-	-	-	-	-
16.8 Patient Simulator (Mannequin)									-	-	-	-	-	-
16.8.1 Clinical Application									-	-	-	-	-	-
16.8.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.8.3 Perform Calibration/Verification									-	-	-	-	-	-
16.8.4 Isolate Malfunction									-	-	-	-	-	-
16.9 Warming Cabinet									-	-	-	-	-	-
16.9.1 Clinical Application									-	-	-	-	-	-
16.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.9.3 Perform Calibration/Verification									-	-	-	-	-	-
16.9.4 Isolate Malfunction									-	-	-	-	-	-
16.10 Surgical Lights									-	-	-	-	-	-
16.10.1 Clinical Application									-	-	-	-	-	-
16.10.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.10.3 Isolate Malfunction									-	-	-	-	-	-
16.11 Medical Scales									-	-	-	-	-	-
16.11.1 Clinical Application									-	-	-	-	-	-
16.11.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
16.11.3 Perform Calibration/Verification									-	-	-	-	-	-
16.11.4 Isolate Malfunction									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
16.12 Refrigeration Systems (Medical)									-	-	-	-	-	-
16.12.1 Clinical Application									B	-	-	B	-	-
16.12.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
16.12.3 Perform Calibration/Verification									-	-	-	b	-	-
16.12.4 Isolate Malfunction									-	-	-	b	-	-
16.12.5 Alarm Systems									-	-	-	-	-	-
17 DIAGNOSTIC EQUIPMENT SYSTEMS TR: Manufacturer's Literature; ANSI/AAMI EQ 56, Recommended Practice for a Medical Equipment Management Program; ECRI Biomedical Benchmark; ECRI Health Devices System; NFPA 99; AFI 41-201; 21 CFR Chapter I; IEC 60601-2-54; NFPA 70; NCRP 102; NCRP 105; NCRP 107; NCRP 127; Foundations of Medical Imaging; Principles of Radiographic Imaging: An Art and a Science; The Physics of Diagnostic Imaging; Essentials of Ultrasound Physics; Radiologic Science for Technologists: Physics, Biology, and Protection, 9th; Computed Tomography: From Photon Statistics to Modern Cone-Beam CT; Nuclear Medicine Physics; IEC 60601-2-25; Clinical Engineering Handbook; IEC 60601-2-34; IEC 60601-2-37; IEC 60601-2-32; IEC 80601-2-30; IEC 60601-2-28; IEC 60601-2-27; IEC 60601-2-26; IEC 60601-2-25; IEC 60601-2-51; IEC 60601-2-33; IEC 60601-2-11; ANSI/ASA S3.6														
17.1 Diagnostic Imaging Systems									-	-	-	-	-	-
17.1.1 Ionizing Imaging Systems									-	-	-	-	-	-
17.1.1.1 Principles of X-Ray Generation									B	-	-	B	-	-
17.1.1.2 Principles of Digital Imaging									B	-	-	B	-	-
17.1.1.3 Fixed X-Ray Systems									-	-	-	-	-	-
17.1.1.3.1 Radiologic X-Ray									-	-	-	-	-	-
17.1.1.3.1.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.1.2 Perform Preventive Maintenance Inspection		*							2b	-	-	b	-	-
17.1.1.3.1.3 Perform System Calibration/Verification		*							2b	-	-	b	-	-
17.1.1.3.1.4 Isolate Malfunctions									2b	-	-	b	-	-
17.1.1.3.1.5 Perform Post Calibration Radiation Inspection (PCRI)		*							2b	-	-	b	-	-
17.1.1.3.2 Fluoroscopic X-Ray									-	-	-	-	-	-
17.1.1.3.2.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.2.3 Perform System									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Skill Level	5 Skill Level	7 Skill Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Calibration/Verification														
17.1.1.3.2.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.2.5 Perform Post Calibration Radiation Inspection (PCRI)									-	-	-	-	-	-
17.1.1.3.3 Tomography									-	-	-	-	-	-
17.1.1.3.3.1 Clinical Applications									-	-	-	B	-	-
17.1.1.3.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.3.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.4 Computed Tomography TR: Special Radiographic Procedures; Computed Tomography: From Photon Statistics to Modern Cone Beam CT									-	-	-	-	-	-
17.1.1.3.4.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.4.2 Principles									A	-	-	B	-	-
17.1.1.3.4.3 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.4.4 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.4.5 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.5 Mammography TR: NCRP 85, ACR standards									-	-	-	-	-	-
17.1.1.3.5.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.5.2 Regulatory Requirements									-	-	-	B	-	-
17.1.1.3.5.3 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.5.4 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.5.5 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.5.6 Perform Mammography Quality Standards Act (MQSA) procedures									-	-	-	-	-	-
17.1.1.3.6 Stereotactic Biopsy Unit									-	-	-	-	-	-
17.1.1.3.6.1 Clinical Applications									-	-	-	-	-	-
17.1.1.3.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.6.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.6.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.7 Dental x-Ray Systems TR; NCRP 35, ANSI/ADA 26									-	-	-	-	-	-
17.1.1.3.7.1 Intraoral									-	-	-	-	-	-
17.1.1.3.7.1.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.7.1.2 Perform Preventive		*							2b	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Maintenance Inspection														
17.1.1.3.7.1.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
17.1.1.3.7.1.4 Isolate Malfunctions									2b	-	-	-	-	-
17.1.1.3.7.2 Panoramic									-	-	-	-	-	-
17.1.1.3.7.2.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.7.2.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
17.1.1.3.7.2.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
17.1.1.3.7.2.4 Isolate Malfunctions									2b	-	-	-	-	-
17.1.1.3.7.3 Cephalometric									-	-	-	-	-	-
17.1.1.3.7.3.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.7.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.7.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.7.3.4 Isolate malfunctions									-	-	-	-	-	-
17.1.1.3.7.4 Cone Beam Computed Tomography									-	-	-	-	-	-
17.1.1.3.7.4.1 Clinical Applications									A	-	-	B	-	-
17.1.1.3.7.4.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.7.4.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.7.4.4 Isolate malfunctions									-	-	-	-	-	-
17.1.1.3.8 Oncology Radiographic Treatment Planning Simulator									-	-	-	-	-	-
17.1.1.3.8.1 Clinical Applications									-	-	-	-	-	-
17.1.1.3.8.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.8.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.8.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.3.9 Bone Densitometer									-	-	-	-	-	-
17.1.1.3.9.1 Clinical Applications									-	-	-	-	-	-
17.1.1.3.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.9.4 Isolate Malfunctions									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
17.1.1.3.10 Positron Emission Tomography (PET)									-	-	-	-	-	-
17.1.1.3.10.1 Clinical Applications									-	-	-	-	-	-
17.1.1.3.10.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.1.3.10.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.1.3.10.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.1.4 Mobile X-Ray Systems									-	-	-	-	-	-
17.1.1.4.1 Radiographic									-	-	-	-	-	-
17.1.1.4.1.1 Clinical Applications									A	-	-	B	-	-
17.1.1.4.1.2 Perform Preventive Maintenance Inspection									2b	-	-	b	-	-
17.1.1.4.1.3 Perform System Calibration/Verification									2b	-	-	-	-	-
17.1.1.4.1.4 Isolate Malfunctions									2b	-	-	-	-	-
17.1.1.4.2 Fluoroscopic									-	-	-	-	-	-
17.1.1.4.2.1 Clinical Applications									A	-	-	B	-	-
17.1.1.4.2.2 Perform Preventive Maintenance Inspection									b	-	-	-	-	-
17.1.1.4.2.3 Perform System Calibration/Verification									b	-	-	-	-	-
17.1.1.4.2.4 Isolate Malfunctions									-	-	-	-	-	-
17.1.2 Non-Ionizing Imaging Systems									-	-	-	-	-	-
17.1.2.1 Fixed Non-Ionizing Imaging Systems									-	-	-	-	-	-
17.1.2.1.1 Magnetic Resonance Imaging (MRI) TR: Magnetic Resonance Imaging, Physical and Biological Principles, Electromagnetic Analysis and Design in Magnetic Resonance Imaging (Biomedical Engineering)									-	-	-	-	-	-
17.1.2.1.1.1 Clinical Applications									A	-	-	B	-	-
17.1.2.1.1.2 Principles									A	-	-	B	-	-
17.1.2.1.1.3 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.2.1.1.4 Perform System Calibration/Certification									-	-	-	-	-	-
17.1.2.1.1.5 Isolate Malfunctions									-	-	-	-	-	-
17.1.2.1.2 Nuclear Medicine (Gamma Camera) TR: Principles and Practices of Nuclear Medicine, Nuclear Medicine Physics; Essentials of Nuclear Medicine Imaging (Current Edition)									-	-	-	-	-	-
17.1.2.1.2.1 Clinical Applications									A	-	-	B	-	-
17.1.2.1.2.2 Principles									A	-	-	B	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level		5 Skill Level		7 Skill Level	
									(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
17.1.2.1.2.3 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.2.1.2.4 Perform System Calibration/Verification									-	-	-	-	-	-
17.1.2.1.2.5 Isolate Malfunctions									-	-	-	-	-	-
17.1.2.1.3 Mobile Non-Ionizing Imaging Systems									-	-	-	-	-	-
17.1.2.1.3.1 Diagnostic Ultrasound									-	-	-	-	-	-
17.1.2.1.3.1.1 Doppler Units									-	-	-	-	-	-
17.1.2.1.3.1.1.1 Clinical Applications									A	-	-	-	-	-
17.1.2.1.3.1.1.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.1.2.1.3.1.1.3 Isolate Malfunctions									-	-	-	-	-	-
17.1.2.1.3.1.2 Imaging Systems									-	-	-	-	-	-
17.1.2.1.3.1.2.1 Clinical Applications									A	-	-	B	-	-
17.1.2.1.3.1.2.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
17.1.2.1.3.1.2.3 Perform System Calibration/Verifi cation/Quality Assurance Inspection									2b	-	-	-	-	-
17.1.2.1.3.1.2.4 Isolate Malfunctions									-	-	-	-	-	-
17.2 Audiometer									-	-	-	-	-	-
17.2.1 Clinical Applications									A	-	-	B	-	-
17.2.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
17.2.3 Perform System Calibration/Verification									2b	-	-	-	-	-
17.2.4 Isolate Malfunctions									2b	-	-	-	-	-
17.3 Tympanometer									-	-	-	-	-	-
17.3.1 Clinical Applications									-	-	-	B	-	-
17.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.3.4 Isolate Malfunctions									-	-	-	-	-	-
17.4 Electrocardiographs									-	-	-	-	-	-
17.4.1 Clinical Applications									A	-	-	B	-	-
17.4.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
17.4.3 Perform System		*							2b	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Calibration/Verification														
17.4.4 Isolate Malfunctions									2b	-	-	-	-	-
17.5 Physiological/Vital Signs Monitoring Systems									-	-	-	-	-	-
17.5.1 Physiological Monitors									-	-	-	-	-	-
17.5.1.1 Clinical Applications									A	-	-	B	-	-
17.5.1.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
17.5.1.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
17.5.1.4 Isolate Malfunctions									2b	-	-	-	-	-
17.5.2 Vital Signs Monitor									-	-	-	-	-	-
17.5.2.1 Clinical Applications									-	-	-	-	-	-
17.5.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.2.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.2.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.3 Blood Pressure Monitor (Noninvasive)									-	-	-	-	-	-
17.5.3.1 Clinical Applications									-	-	-	-	-	-
17.5.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.3.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.4 Cardiac Output Monitor									-	-	-	-	-	-
17.5.4.1 Clinical Applications									-	-	-	B	-	-
17.5.4.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.4.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.4.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.5 Respiration Monitors									-	-	-	-	-	-
17.5.5.1 Clinical Applications									A	-	-	B	-	-
17.5.5.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.5.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.5.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.6 Telemetry Monitoring									-	-	-	-	-	-
17.5.6.1 Clinical Applications									A	-	-	B	-	-
17.5.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.6.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.6.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.7 Pulse Oximeters									-	-	-	-	-	-
17.5.7.1 Clinical Applications									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
17.5.7.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.7.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.7.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.8 Automatic Blood Pressure Monitors (Invasive)									-	-	-	-	-	-
17.5.8.1 Clinical Applications									-	-	-	-	-	-
17.5.8.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.8.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.8.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.9 Carbon Dioxide Monitors									-	-	-	-	-	-
17.5.9.1 Clinical Applications									-	-	-	-	-	-
17.5.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.9.4 Isolate Malfunctions									-	-	-	-	-	-
17.5.10 Thermometers, Patient									-	-	-	-	-	-
17.5.10.1 Clinical Applications									-	-	-	-	-	-
17.5.10.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.5.10.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.5.10.4 Isolate Malfunctions									-	-	-	-	-	-
17.6 Pulmonary Function Analyzers									-	-	-	-	-	-
17.6.1 Clinical Applications									A	-	-	B	-	-
17.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.6.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.6.4 Isolate Malfunctions									-	-	-	-	-	-
17.7 Spirometers									-	-	-	-	-	-
17.7.1 Clinical Applications									A	-	-	B	-	-
17.7.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
17.7.3 Perform System Calibration/Verification									2b	-	-	-	-	-
17.7.4 Isolate Malfunctions									2b	-	-	-	-	-
17.8 Fetal Heart Monitor									-	-	-	-	-	-
17.8.1 Clinical Applications									A	-	-	B	-	-
17.8.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
17.8.3 Perform System Calibration/Verification									b	-	-	-	-	-
17.8.4 Isolate Malfunctions									2b	-	-	-	-	-
17.9 Electroencephalograph (EEG)									-	-	-	-	-	-
17.9.1 Clinical Applications									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
17.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.9.4 Isolate Malfunctions									-	-	-	-	-	-
17.10 Optometry/Ophthalmic Instruments									-	-	-	-	-	-
17.10.1 Visual Field Analyzer									-	-	-	-	-	-
17.10.1.1 Clinical Applications									-	-	-	-	-	-
17.10.1.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.1.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.1.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.2 Keratometer									-	-	-	-	-	-
17.10.2.1 Clinical Applications									-	-	-	-	-	-
17.10.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.2.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.2.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.3 Slit Lamp									-	-	-	-	-	-
17.10.3.1 Clinical Applications									-	-	-	B	-	-
17.10.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.3.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.4 Lensometer									-	-	-	-	-	-
17.10.4.1 Clinical Applications									-	-	-	-	-	-
17.10.4.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.4.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.4.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.5 Retinoscope									-	-	-	-	-	-
17.10.5.1 Clinical Applications									-	-	-	-	-	-
17.10.5.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.5.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.5.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.6 Phoropter									-	-	-	-	-	-
17.10.6.1 Clinical Applications									-	-	-	-	-	-
17.10.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.6.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.6.4 Isolate Malfunctions									-	-	-	-	-	-
17.10.7 Tonometer									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
17.10.7.1 Clinical Applications									-	-	-	B	-	-
17.10.7.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
17.10.7.3 Perform System Calibration/Verification									-	-	-	-	-	-
17.10.7.4 Isolate Malfunctions									-	-	-	-	-	-
18 DIAGNOSTIC SUPPORT EQUIPMENT TR: Manufacturer's Literature; ANSI/AAMI EQ 56, Recommended Practice for a Medical Equipment Management Program; ECRI Biomedical Benchmark; ECRI Health Devices System; NFPA 99; AFI 41-201; 21 CFR Chapter I; ACR; FDA; IEC 60601-2-18; UL 1778														
18.1 Imaging Support Equipment									-	-	-	-	-	-
18.1.1 Contrast Injectors									-	-	-	-	-	-
18.1.1.1 Clinical Applications									-	-	-	B	-	-
18.1.1.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.1.1.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.1.2 LASER Imagers									-	-	-	-	-	-
18.1.2.1 Clinical Applications									A	-	-	B	-	-
18.1.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.1.2.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.1.2.4 Isolate Malfunctions									-	-	-	-	-	-
18.1.2.5 Install									-	-	-	-	-	-
18.1.3 Computed Radiography (CR) Plate Readers									-	-	-	-	-	-
18.1.3.1 Clinical Applications									A	-	-	B	-	-
18.1.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.1.3.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.1.3.4 Isolate Malfunctions									-	-	-	-	-	-
18.2 Tissue Processors									-	-	-	-	-	-
18.2.1 Clinical Applications									-	-	-	A	-	-
18.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.2.3 Isolate Malfunctions									-	-	-	-	-	-
18.3 Microscope									-	-	-	-	-	-
18.3.1 Clinical Applications									-	-	-	B	-	-
18.3.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.3.3 Verify Alignment									-	-	-	-	-	-
18.3.4 Isolate Malfunctions									-	-	-	-	-	-
18.4 Centrifuge									-	-	-	-	-	-
18.4.1 Clinical Applications									A	-	-	B	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
18.4.2 Perform Preventive Maintenance Inspection		*							2b	-	-	-	-	-
18.4.3 Perform System Calibration/Verification		*							2b	-	-	-	-	-
18.4.4 Isolate Malfunctions									2b	-	-	-	-	-
18.5 Electronic Particle Counter									-	-	-	-	-	-
18.5.1 Clinical Applications									A	-	-	B	-	-
18.5.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.5.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.5.4 Isolate Malfunctions									-	-	-	-	-	-
18.6 Spectrophotometers									-	-	-	-	-	-
18.6.1 Clinical Applications									-	-	-	-	-	-
18.6.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.6.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.6.4 Isolate Malfunctions									-	-	-	-	-	-
18.7 Blood Gas Analyzer									-	-	-	-	-	-
18.7.1 Clinical Applications									A	-	-	B	-	-
18.7.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.7.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.7.4 Isolate Malfunctions									-	-	-	-	-	-
18.8 Chemistry Analyzer									-	-	-	-	-	-
18.8.1 Clinical Applications									A	-	-	B	-	-
18.8.2 Perform Preventive Maintenance Inspection									2b	-	-	-	-	-
18.8.3 Perform System Calibration/Verification									2b	-	-	-	-	-
18.8.4 Isolate Malfunctions									2b	-	-	-	-	-
18.9 Electrolyte Analyzer									-	-	-	-	-	-
18.9.1 Clinical Applications									A	-	-	B	-	-
18.9.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.9.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.9.4 Isolate Malfunctions									-	-	-	-	-	-
18.10 Blood Cell Washing Systems									-	-	-	-	-	-
18.10.1 Clinical Applications									A	-	-	B	-	-
18.10.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.10.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.11 DNA Analyzer									-	-	-	-	-	-
18.11.1 Clinical Applications									A	-	-	B	-	-
18.11.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
18.11.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.11.4 Isolate Malfunctions									-	-	-	-	-	-
18.12 Microtome System									-	-	-	-	-	-
18.12.1 Clinical Applications									-	-	-	-	-	-
18.12.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.12.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.12.4 Isolate Malfunctions									-	-	-	-	-	-
18.13 Stress Test Systems									-	-	-	-	-	-
18.13.1 Clinical Applications									A	-	-	B	-	-
18.13.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.13.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.13.4 Isolate Malfunctions									-	-	-	-	-	-
18.14 Fiber Optic Systems/Scopes (Flexible & Rigid)									-	-	-	-	-	-
18.14.1 Clinical Applications									A	-	-	B	-	-
18.14.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.14.3 Isolate Malfunctions									-	-	-	-	-	-
18.15 Fiber Optic Scope Washers									-	-	-	-	-	-
18.15.1 Clinical Applications									A	-	-	B	-	-
18.15.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
18.15.3 Isolate Malfunctions									-	-	-	-	-	-
18.16 Endoscopic System									-	-	-	-	-	-
18.16.1 Clinical Applications									A	-	-	B	-	-
18.16.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.16.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.16.4 Isolate Malfunctions									-	-	-	-	-	-
18.17 Fume/Laminar Flow Hoods									-	-	-	-	-	-
18.17.1 Clinical Applications									-	-	-	A	-	-
18.17.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.17.3 Perform System Calibration/Verification									-	-	-	-	-	-
18.17.4 Isolate Malfunctions									-	-	-	-	-	-
18.18 Uninterruptible Power Supply Systems									-	-	-	-	-	-
18.18.1 System Applications									-	-	-	B	-	-
18.18.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
18.18.3 Isolate Malfunctions									-	-	-	-	-	-
19 SUPERVISION and TRAINING CERTIFICATIONS: TR: AFI 41-401; DOD Directive 8570.1; CompTIA A+; CompTIA														

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
Net+; CompTIA Sec+; Project Management Institute														
19.1 AAMI Credentials Institute (ACI) TR: AAMI Publications									A	-	-	-	-	-
19.2 Computing Technology Industry Association (CompTIA) TR: CompTIA A+, Net+, Sec+									A	-	-	B	-	-
19.3 Project Management Institute (PMI)									-	-	-	-	-	A
20 FACILITY MANAGEMENT NOTE: Training requirements can be met by attending the Facility Management Course L5OZO4XXX 08AA, held by the 937 TRG Fort Sam Houston, Texas. TR: AFI 31-101, AFI 32-2001; AFI 41-201; AFI 41-209; AFI 64-102; 91-204; NFPA 70; NFPA 99; NFPA 101; JC Comprehensive Accreditation Manual for Hospitals; UFC 4-510-01; AFI 32-7001														
20.1 Program Overview									A	-	-	B	-	-
20.2 Facility Master Plan									-	-	-	A	-	B
20.3 Facilities Operation, Maintenance and Repair									-	-	-	-	-	-
20.3.1 Control Work Request									-	-	-	-	-	-
20.3.2 Validate Civil Engineering Reimbursements									-	-	-	-	-	-
20.4 Contract Management									-	-	-	-	-	-
20.5 Project Management									-	-	-	-	-	A
20.6 Monitor Housekeeping									-	-	-	-	-	-
20.7 Security and Resource Protection Programs									-	-	-	-	-	-
20.8 Hazardous/Medical Waste Management									-	-	-	-	-	-
20.9 Execute Medical Group Safety Protection Program									-	-	-	-	-	-
20.10 Execute Medical Group Fire Protection Program									-	-	-	-	-	-
20.11 The Joint Commission Environment of Care (EC) Management Plans									-	-	-	A	-	B
20.12 Environmental Compliance									-	-	-	-	-	A
21 HEALTHCARE INFORMATION TECHNOLOGY MANAGEMENT TR: Clinical Engineering Handbook; Bright Ideas (ASIN B0070QMRS0); Medical Technology for the IT Professional; 45 CFR 160; 45 CFR162; 45 CFR 164; DOD Directive 8570.1; CompTIA A+; CompTIA Net+; CompTIA Sec+; CompTIA Server+ PACS and Imaging Informatics: Basic Principles and Applications; A Practicum for Biomedical Engineering & Technology Management Issues; (NISP) National Industrial Security														

1. Tasks, Knowledge And Technical References	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level (1) Course	(2) CDC	5 Skill Level (1) Course	(2) CDC	7 Skill Level (1) Course	(2) CDC
Program DoD 5220.22-M; NIST SP 800														
21.1 Healthcare IT Overview									A	-	-	B	-	-
21.2 Electronic Healthcare Records Management (EHRM) Equipment Interface									A	-	-	B	-	-
21.3 Health Insurance Portability and Accountability Act (HIPAA) Medical Device Compliance									A	-	-	B	-	-
21.4 Medical Device Information Systems (MDIS) TR: http://www.afams.af.mil/shared/media/document/afd-110826-041.dpf , https://kx.afms.mil/kxweb/dotmil/file/web/ctb_147640.pdf , http://www.fda.gov/medicalDevices/productsandmedicalprocedures/GeneralhospitalDevicesandSupplies/MedicalDeviceDataSystems/Default.htm									-	-	-	-	-	-
21.4.1 MDIS Certification and Accreditation Requirements									-	-	-	A	-	B
21.4.2 Roles									-	-	-	A	-	B
21.4.3 Preventive Maintenance Inspection/Verification									-	-	-	A	-	B
21.4.4 Picture Archiving and Communications Systems (PACS)									-	-	-	-	-	-
21.4.4.1 Clinical Applications									A	-	-	B	-	-
21.4.4.2 Validate Study Workflow									2b	-	-	b	-	-
21.4.4.3 Perform Organizational Maintenance									-	-	-	b	-	-
21.4.4.4 Isolate Malfunctions									1a	-	-	-	-	-
21.4.5 Diagnostic Imaging Monitors									-	-	-	-	-	-
21.4.5.1 Clinical Applications									A	-	-	B	-	-
21.4.5.2 Perform System Calibration/Verification/Quality Assurance Inspection									2b	-	-	b	-	-
21.4.5.3 Isolate Malfunctions									-	-	-	-	-	-
21.4.6 Medication Dispensing Systems									-	-	-	-	-	-
21.4.6.1 Decentralized Medication Management System									-	-	-	-	-	-
21.4.6.1.1 Clinical Applications									A	-	-	B	-	-
21.4.6.1.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
21.4.6.1.3 Isolate Malfunctions									-	-	-	-	-	-
21.4.6.2 Automated Medication Dispensing Systems									-	-	-	-	-	-
21.4.6.2.1 Clinical Applications									A	-	-	B	-	-
21.4.6.2.2 Perform Preventive Maintenance Inspection									-	-	-	-	-	-
21.4.6.2.3 Perform system Calibration/Verification									-	-	-	-	-	-

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A		B		C	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	3 Skill Level	5 Skill Level	7 Skill Level			
									(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
21.4.6.2.4 Isolate malfunction									-	-	-	-	-	-
21.4.7 Central Patient Monitoring Station									-	-	-	-	-	-
21.4.7.1 Clinical Applications									A	-	-	B	-	-
21.4.7.2 Perform Preventive Maintenance Inspection									-	-	-	b	-	-
21.4.7.3 Isolate Malfunctions									-	-	-	b	-	-
21.4.7.4 Install									-	-	-	-	-	-
21.4.8 Anesthesia Recording and Monitoring Systems									-	-	-	-	-	-
21.4.8.1 Clinical Applications									A	-	-	B	-	-
21.4.8.2 Perform Organizational Maintenance									-	-	-	b	-	-
21.4.8.3 Isolate Malfunction									-	-	-	-	-	-
21.5 MEDICAL DEVICE INFORMATION SYSTEMS (MDIS) FUNDAMENTALS TR: CompTIA A+ Certification (current edition); CompTIA N+ Certification (current edition); CompTIA Server + Certification (current edition): CompTIA Security + Certification (current edition); (NISP) National Industrial Security Program DoD 5220.22-M; (NIST) National Institute of Standards; AAMI Publications and Technology Special Publication 800-100									-	-	-	-	-	-
21.5.1 Computers									-	-	-	-	-	-
21.5.1.1 Hardware		*							B	-	-	B	-	-
21.5.1.2 Input/Output Devices									B	-	-	B	-	-
21.5.1.3 Operating Systems									B	-	-	B	-	-
21.5.1.4 Install Operating System		*							2b	-	-	b	-	-
21.5.1.5 Configure an Operating System		*							2b	-	-	b	-	-
21.5.1.6 Isolate Malfunctions									2b	-	-	-	-	-
21.5.2 Networks									-	-	-	-	-	-
21.5.2.1 Communication Protocols									B	-	-	B	-	-
21.5.2.2 Wired									B	-	-	B	-	-
21.5.2.3 Wireless									B	-	-	B	-	-
21.5.2.4 Isolate Malfunctions									2b	-	-	-	-	-
21.5.2.5 Install									2b	-	-	-	-	-
21.5.2.6 Configure									2b	-	-	-	-	-
21.5.3 Network Components									-	-	-	-	-	-
21.5.3.1 Modem/Network Interface Card (NIC)									B	-	-	B	-	-
21.5.3.2 Switches, Bridges and Hubs									B	-	-	B	-	-
21.5.3.3 Routers									B	-	-	B	-	-
21.5.4 Servers									-	-	-	-	-	-
21.5.4.1 Hardware									A	-	-	B	-	-
21.5.4.2 Server Operating Systems									A	-	-	B	-	-
21.5.4.3 Install									-	-	-	-	-	-
21.5.4.4 Configure									-	-	-	-	-	-
21.5.4.5 Virtualization									A	-	-	-	-	-

	2. Core Tasks			3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided (See Note)					
1. Tasks, Knowledge And Technical References	A	B	C	A	B	C	D	E	A 3 Skill Level		B 5 Skill Level		C 7 Skill Level	
	3 Level	5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials	Certifier Initials	(1) Course	(2) CDC	(1) Course	(2) CDC	(1) Course	(2) CDC
21.5.4.6 Perform Routine Maintenance									-	-	-	-	-	-
21.5.4.7 Isolate Malfunctions									-	-	-	-	-	-
21.5.5 Database Overview									A	-	-	B	-	-
21.5.6 Storage									-	-	-	-	-	-
21.5.6.1 Redundant Array of Independent Disks (RAID)									A	-	-	B	-	-
21.5.6.2 Network Attached Storage (NAS)									A	-	-	B	-	-
21.5.6.3 Vendor Neutral Archive (VNA)									A	-	-	B	-	-
21.5.7 Medical Device Information Systems Security									-	-	-	-	-	-
21.5.7.1 Security Concepts		*							A	-	-	B	-	-
21.5.7.2 Network Hardening									-	-	-	A	-	B
21.5.7.3 Application Hardening									A	-	-	B	-	-
21.6 Asset Tracking Systems									-	-	-	B	-	-

SECTION B, COURSE OBJECTIVE LIST

1. If a written copy of the Course Objectives List is required, contact BMET Training Program Curriculum Support at METC, DSN 420-1890.
2. Career Development Course: CDC information can be obtained from the Air Force Career Development Academy at Maxwell AFB, Gunter Annex, AL.

SECTION C, SUPPORT MATERIALS

The following technical references have been used in development of this CFETP and are important to the BMET field in general:

1. Air Force Medical Logistics Letters. All Editions. Air Force Medical Logistics Office (AFMLO), 693 Neiman Street, Fort Detrick MD, 21702-5006; (301) 619-4039. <https://medlog.us.af.mil>
2. American National Standards Institute (ANSI) Publications. Current Editions, ANSI, Inc., 25 West 43rd Street, 4th Floor, New York NY, 10036; (212) 642-4900. <http://www.ansi.org/>
3. American Society for Testing and Materials (ASTM) Publications. Current Editions, ASTM, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken PA, 19428-2959; (800) 262-1373. <http://www.astm.org/>
4. Atlas of Human Anatomy. 5th Edition, Frank Netter. Saunders, 2010, ISBN: 9781416059516
5. Association for the Advancement of Medical Instrumentation (AAMI) Publications. Current Editions, AAMI, 4301 N. Fairfax Drive, Suite 301, Arlington VA, 22203-1633; (703) 525-4890. <http://www.aami.org/>
6. Biomedical Device Technology: Principles and Design. 4th Edition, Anthony Y. K. Chan. Charles C. Thomas Publications Ltd., 2008, ISBN: 9780398077006.
7. Clinical Laboratory Standards Institute (CLSI) Publications. Current Editions, CLSI, 950 West Valley Road, Suite 2500, Wayne PA, 19087; (877) 447-1888. <http://www.clsi.org/>
8. Code of Federal Regulations. Current Editions; (202) 512-1800. <http://www.gpoaccess.gov/cfr/index.html>
9. Comprehensive Accreditation Manual for Hospitals (CAMH). Current Edition, Joint Commission, 1515 W. 22nd Street, Suite 1300W, Oak Brook IL, 60523; (630) 268-7400. <http://www.jointcommission.org/>
10. CompTIA A+ Certification All-in-One Exam Guide. 8th Edition, Michael Meyers. McGraw-Hill Osborne Media, 2012, ISBN: 9780071795128.
11. CompTIA Network+ Certification All-in-One Exam Guide. 5th Edition, Michael Meyers. McGraw-Hill Osborne Media, 2012, ISBN: 9780071789226.
12. CompTIA Security+ All-in-One Exam Guide. 3rd Edition, Michael Meyers. McGraw-Hill Osborne Media, 2011, ISBN: 9780071771474.
13. Computed Tomography: From Photon Statistics to Modern Cone-Beam CT. Thorsten M. Buzug. Springer, 2010, ISBN: 9783642072574.
14. Electromagnetic Analysis and Design in Magnetic Resonance Imaging (Biomedical Engineering). Jian-Ming Jin. CRC Press, 1998, ISBN: 9780849396939.

15. Electronic Fundamentals: Circuits, Devices & Applications. 8th Edition, Thomas Floyd and David Buchla. Prentice Hall, 2010, ISBN: 9780135072950.
16. ECRI Institute Publications. Current Editions, 5200 Butler Pike, Plymouth Meeting PA, 19462-1298; (610) 825-6000. <http://www.ecri.org/>
17. Essentials of Nuclear Medicine Imaging. 5th Edition, Fred Mettler MD MPH and Milton Guiberteau MD. Saunders, 2006, ISBN: 9780721602011.
18. Gray's Anatomy for Students. 2nd Edition, Richard Drake, Wayne Vogl and Adam Mitchell. Churchill Livingstone, 2009, ISBN: 9780443069529.
19. Grob's Basic Electronics. 11th Edition, Mitchel Schultz. Career Education, 2010, ISBN: 9780077410094.
20. Human Anatomy. 7th Edition, Frederic Martini, Michael Timmons and Robert Tallitsch. Benjamin-Cummings, 2011, ISBN: 9780321688156.
21. Institute of Electrical and Electronics Engineers (IEEE) Publications. Current Editions, IEEE Operations Center, 445 Hoes Lane, Piscataway NJ, 08854-4141; (732) 981-0060. <http://www.ieee.org/>
22. Introduction to Biological Physics for the Health and Life Sciences. Kirsten Franklin, Paul Muir, Terry Scott and Lara Wilcocks. Wiley, 2010, ISBN: 9780470665930.
23. Introduction to Biomedical Instrumentation. Current Edition. Barbara Christe, Cambridge University Press, 2009, ISBN: 9780521515122.
24. Magnetic Resonance Imaging, Physical and Biological Principles. 3rd Edition, Stewart C. Bushong. Moseby, 2003, ISBN: 978-0323014854.
25. Medical Device Register. Volume I & II, Current Edition, Grey House Publishing., 4919 Route 22, P.O. Box 56, Amenia NY, 12501; (800) 562-2139. http://www.greyhouse.com/medical_device.htm
26. Medical Instrumentation Application and Design. 4th Edition, John G. Webster. Wiley, 2009, ISBN: 9780471676003.
27. Medical Technology for the IT Professional. ECRI, 2009, ISBN: 9780981924133.
28. National Council on Radiation Protection & Measurements (NCRP) Publications. Current Editions, NCRP, Publications Department, 7910 Woodmont Avenue, Suite 400, Bethesda MD, 20814-3095; (301) 657-2652. <http://www.ncrponline.org/>
29. National Electrical Manufacturers Association (NEMA) Publications. Current Editions, NEMA 1300 N. 17th Street, Suite 1752, Rosslyn VA, 22209; (703) 841-3200. <http://www.nema.org/>
30. National Fire Protection Association (NFPA) Publications. Current Editions, NFPA, Publication Sales Department, 1 Batterymarch Park, Quincy MA, 02169-7471; (800) 344-3555.

<http://www.nfpa.org/>

31. Nuclear Medicine Physics. Joao Jose De Lima. CRC Press, 2010, ISBN: 9781584887959.
32. Occupational Safety & Health Administration (OSHA) Publications. Current Editions, OSHA, 200 Constitution Ave., Washington D.C., 20210; (800) 321-6742. <http://www.osha.gov/>
33. PACS and Imaging Informatics: Basic Principles and Applications. 2nd Edition, H. K. Huang. Wiley & Sons, 2010, ISBN: 9780470373729.
34. Physics of the Life Sciences. Jay Newman. Springer, 2008, ISBN: 9780387772585.
35. Radiographic Science for Technologists: Physics, Biology and Protection. 9th Edition, Stewart C. Bushong. Mosby/Elsevier, 2008, ISBN: 9780323048378.
36. ThomasNet.com. 5 Penn Plaza, New York NY, 10001; (212) 629-2144. <http://www.thomasnet.com/>
37. TO 00-25-234; <https://www.robins.af.mil/shared/media/document/AFD-091005-067.pdf>
38. Underwriters Laboratories (UL) Publications. Current Editions, UL Inc., 2600 N. W. Lake Road, Camas WA, 98607; (877) 854-3577. <http://www.ul.com/global/eng/pages/>

SECTION D, TRAINING COURSE INDEX

US AIR FORCE IN-RESIDENCE COURSES			
Course Number	Course Title	Course Length	Training Location
L5ABJ4A231 00AA	Biomedical Equipment Apprentice	223 Days	JBSA-Ft Sam Houston TX
L5OZO4XXX 08AA	Medical Facilities Management	10 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 08BA	Advanced Field Medical Support Systems	15 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00AA	Medical Device Information Technology Systems	30 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00BA	Advanced Sterilization Systems	8 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00CA	Advanced Radiographic/Fluoroscopic and Acceptance	15 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00DA	Medical Laser Systems	10 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00FA	Telemedicine	19 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00KA	Mammography Imaging Systems	8 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00LA	Ultrasound Imaging Systems	7 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00NA	Biomedical Equipment Maintenance Management	6 Days	JBSA-Ft Sam Houston TX
L5AZJ4A271 00OA	Computed Tomography Systems	13 Days	JBSA-Ft Sam Houston TX

AIR FORCE INSTITUTE FOR ADVANCED DISTRIBUTED LEARNING (AFIADL) COURSES			
Course Number	Course Title	Course Length	Training Location
CDC4A251A	Biomedical Equipment Journeyman	5 Volumes	Maxwell AFB, Gunter Annex, AL.
CDC4A251B	Biomedical Equipment Journeyman	4 Volumes	Maxwell AFB, Gunter Annex, AL.
CDC4A271	Biomedical Equipment Craftsman	2 Volumes	Maxwell AFB, Gunter Annex, AL.

NOTE: Refer the website, <https://etca.randolph.af.mil/> for further information on all AETC courses and symposia.

SECTION E, MAJCOM UNIQUE REQUIREMENTS

1. Purpose. The following information applies to the Air Reserve Component (ARC)/Air National Guard (ANG) and serves to provide ARC/ANG Biomedical Equipment Technicians (BMET) apprentices (non-prior-service and retrainees) with an opportunity to receive the additional training days necessary to become proficient in maintaining biomedical equipment that is identified in this STS as a core task. This section applies to all BMETs assigned to all Air Force Reserve and Air National Guard medical and aeromedical evacuation squadrons (referred to, hereafter, as medical unit).

1.1. Qualification (also referred to as proficiency or seasoning) training requirements:

1.1.1. Qualification training days is available for ARC/ANG BMET apprentices to satisfactorily initiate and complete the core task training requirements identified in this STS.

1.1.2. Upon completion of the DoD Biomedical Equipment Technician training program, L8ABJ4A231 00AA, all BMET apprentices will be assigned to a Medical Equipment Repair Center (MERC) for 120 days to acquire proficiency in performing the core tasks required to successfully achieve the 5-skill level according to Air Force upgrade training guidelines.

1.1.3. For optimal results, this follow-on training should commence immediately following graduation from the Biomedical Equipment Technician Apprentice training program.

1.2. Advanced planning is required to ensure the apprentice receives qualification training immediately upon graduating from the DoD Biomedical Equipment Technician course. With concurrence from the ARC medical unit commander, the section BMET supervisor, in conjunction with the senior air reserve/health, technician must contact the regional MERC to arrange follow-on training for the newly assigned BMET trainee (4A2X1). This process should also be coordinated with the guard liaison at JBSA Ft Sam Houston TX. The MERC may recommend the apprentice receive upgrade training at a qualified AF MTF if extenuating circumstances (i.e., lack of qualified available staff, committed to supporting contingency operations, etc.) fail to permit the apprentice from receiving the training at the MERC. (A qualified MTF is defined as a facility which possesses the time, equipment, and expertise necessary to train the apprentice on all core tasks as outlined in this STS.) Active duty personnel must ensure that an experienced BMET supervisor is assigned to assist the apprentice in gaining the desired confidence and proficiency. The training schedule must be finalized prior to the Biomedical Equipment Technician Apprentice training program start date.

1.3. ANG/ARC unit of assignment must ship the apprentice's BMET toolkit to the Guard or Reserve liaison at JBSA Ft Sam Houston TX. The BMET apprentice requires a toolkit to perform follow-on qualification training at the scheduled regional MERC. (NOTE: All BMETs in the active, Guard, and Reserve require an AF standard issue toolkit to perform duties during peacetime and contingency operations. ARC BMETs are issued a toolkit from their unit of assignment.) Four weeks before the apprentice graduates from the apprentice course, the senior air reserve/health, technician will ship the BMET tool kit to the Guard or Reserve liaison depending upon which component the apprentice is assigned. The guard liaison can be reached at DSN 420-2658. The address is as follows:

Air National Guard/Reserve Component Liaison
2931 Harney Rd Second Floor
JBSA-Ft Sam Houston, TX 78234

1.4. To ensure continuity between BMET resident training and qualification training at the regional MERC, the student will forward a copy of his or her technical school certificate to his or her unit of assignment. The ANG/ARC unit of assignment will then initiate upgrade action using AF Form 2096 to award the 3-skill level and enter the apprentice in the appropriate training status code.

1.5. The apprentice BMET AFSC upgrade training requirements may be accomplished at his or her civilian MTF under the direct supervision of an experienced, qualified BMET supervisor. If the apprentice BMET is employed as a BMET in the civilian sector, has immediate access to the same types of biomedical equipment identified in this STS, and does not receive the appropriate number of qualification training days necessary to successfully complete all core tasks, then this training may be accomplished at the apprentice's civilian MTF under the direct supervision of a qualified BMET. The apprentice must present the supervisor with his or her original copy of the Biomedical Equipment Technician STS. As the required core tasks are successfully completed, the supervisor is authorized to sign-off on the STS indicating that the apprentice has satisfactorily completed each core task.

1.6. The medical AFRC/ANG unit may submit a waiver to bypass the above qualification training if proficiency days are unavailable. In the case where qualification training days are unavailable at the base and the headquarters, the proficiency training may be waived until such time that days become available and the apprentice has an opportunity to train on the equipment identified in this STS. The waiver package must be sent to the AF 4A2 Career Field Manager, Air Force Medical Logistics Office, Ft. Detrick, MD through HQ AFRC/ANG Biomedical Equipment Functional Manager. The AFRC Functional Manager can be reached at DSN 497-1893; the ANG Functional Manager can be reached at DSN 278-8577.

SECTION F, DOCUMENTATION OF TRAINING

(NOTE: Compare to AFI 36-2201, Air Force Training)

1. Work Center Training Plans. The purpose of this section is to provide guidelines and examples of proper documentation for the many electronic forms used in training all enlisted medical personnel. Training documentation helps to assess readiness capability, as well, as individual strengths and weaknesses. It also aids in compliance with all The Joint Commission and other regulatory requirements, as applicable. The enlisted training documentation has migrated from the hard copy to electronic AFTR. AFTR is accessible from the Advance Distance Learning Service via the Air Force Portal. Refer to your unit training manager (UTM) for the most current policies and guidance on training documentation.

2. Air Force Training Record. The AFTR is an enterprise-wide custom training management system designed to replace the paper-based training records system. It is the electronic equivalent of an AF Form 623, *Individual Training Record Folder*, and will be used by career fields within the AFMS to document all training actions. The AFTR allows training plans to be established by Career Field/AFSC, duty position/team member, trainee/trainer/certifier, and any group of tasks that require management, tracking, and documentation. The AFTR components managed by the supervisor are:

2.1. Master Task List (MTL). The MTL is a list containing all the tasks that are to be trained in a work center and is often broken out by specialty. The MTL consists of the STS; AF Form 623 Parts II and III, AF Form 797, *Job Qualification Standard Continuation/Command JQS* and AF Form 1098, *Special Task Certification and Recurring Training*; and Qualification Training Packages (QTPs). The supervisor creates the MTL by selecting tasks from the Unit Task List produced by the UTM and the STS.

2.2. Master Training Plan (MTP). The MTP is a list containing a schedule of training for all tasks within a particular duty position. The MTP consists of the STS; 623 Parts II and III; AF Force Forms 797 and 1098 tasks; and QTPs. The supervisor creates the MTP by assigning training times and methods to tasks in the duty position. Refer to AFI 36-2201 and AFH 36-2235, Volume 11, *Information for Designers of Instructional Systems Application to Unit Training*, for guidance in developing the MTP.

2.3. Duty Task List (DTL). The DTL is a list containing all the tasks to be trained in a duty position. The DTL consists of the STS; AF Form 623 Parts II and III; AF Force Forms 797 and 1098 tasks; and QTPs. The supervisor creates the DTL by selecting tasks from the MTL.

2.4. Individual Training Record (ITR). All training is documented in the ITR. This is the electronic version of the former Enlisted Training and Competency Folder. The ITR is made up of the AF Form 623 Parts I, II and III; AF Forms 623a, 797, 803 and 1098; QTPs and the JQS. This record is automatically populated based upon the duty position the individual is assigned to. Refer to AFI 36-2201 for guidance in documenting training on the various forms contained within the ITR. Maintenance of the CFETP is mandatory for all assigned MSgts and below.

2.4.1. The AFTR provides the capability to incorporate training source documents and/or to manually enter completed training into the ITR. The following documents will be incorporated into the ITR:

2.4.1.1. The member's initial MTF and clinic orientation checklists.

2.4.1.2. Recurrent training such as Basic Life Support and Health Insurance Portability and Accountability Act.

2.4.1.3. AF Form 2096, *Classification/On-the-Job Training Action*.

2.4.1.4. Medical Education & Training Campus (METC) Student Training Report (STR). METC STR documents the level of success, strengths, and weaknesses that a student demonstrated during technical school. It is emailed to the base training manager shortly after the graduate arrives at his/her duty station. This form is maintained in the record until 5-skill level upgrade training is complete.

2.4.1.5. AF Form 803, Report of Task Evaluation. AF Form 803 is used to conduct and document completion of task evaluations during training staff assisted visits, when directed by the commander, or when a task certification requires validation.

2.4.1.6. Other forms as appropriate.

3. Documentation of Training. The purpose of this section is to provide guidelines and examples of proper documentation on the many forms used in training medical materiel personnel. Training documentation helps to assess mission capability and readiness, individual strengths and weaknesses, resources needed to support quality patient care, and defines requirements for individual career progression.

3.1. AF Form 797. The AF Form 797 (Figure 3.1) will be used to record training for tasks that are not otherwise documented in the CFETP.

JOB QUALIFICATION STANDARD CONTINUATION/COMMAND JQS							
CRITICAL TASK	TASK NUMBER	TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	CERTIFICATION				
			START DATE	COMPLETION DATE	TRAINEE'S INITIALS	TRAINER'S INITIALS	CERTIFIER'S INITIALS (IF REQUIRED)
☒	17.10.2. 1	Keratometer clinical Applications					
☒	17.10.3. 1	Slit Lamp clinical Applications					
☒	17.10.4. 1	Lensometer clinical Applications					
☐							
☐							
TRAINEE NAME AMN DOE, JOHN				CFETP/JQS NUMBER		PAGE NO.	

AF IMT 797, 20020801, V3 PREVIOUS EDITIONS ARE OBSOLETE

Figure 3.1. Sample, AF Form 797 Documentation

3.2. AF Form 1098 (Figure 3.2.). Mandatory training requirements may vary from facility to facility. At a minimum, these requirements should be reviewed on an annual basis and updated as required.

SPECIAL TASK CERTIFICATION AND RECURRING TRAINING							
TASK OR RECURRING TRAINING AND TECHNICAL REFERENCES A.	DATE COMPLETED B.	SIGNATURE OF CERTIFYING OFFICIAL C.	INITIAL OF TRAINEE D.	EVALUATION OF TRAINING			
				SCORE OR HOURS E.	TYPE F.	FRE- QUENCY G.	DUE DATE H.
COTR Training	20130715			91		1 Time	
CPR Training	20130915			P		Annual	20140915
CMRT	20130928			P		Annual	20140928
NAME OF TRAINEE (Last, First, Middle Initial) DOE, JOHN		GRADE AMN		UNIT AND OFFICE SYMBOL BMTS/SGQD			

AF IMT 1098, 19850401, V2 PREVIOUS EDITION WILL BE USED.

Figure 3.2. Sample, Recurring Mandatory Training Documentation (AF Form 1098)

3.3. Qualification Training Progress Records were developed to enhance OJT. It provides the trainer with a breakdown of task performance skills to aid in performance evaluation. The evaluations of each task results in either a satisfactory or unsatisfactory score (Figure 3.3).

Rank/Name _____			
Qualification Upgrade Training to:		5-Skill Level	7-Skill Level
PERFORMANCE ITEM		SAT	UNSAT
STS Line Item 17.10.2 Keratometer			
Clinical Applications			
Perform Preventive Maintenance Inspection			
Perform System Calibration/Verification			
Isolate Malfunctions			

Figure 3.3. Sample, Qualification Training Progress Record

3.4. **AF Form 623a.** Use the AF Form 623a available in the AFTR to document all progress of individual training. Document on AF Form 623a the start and completion dates of unit orientation, and reference the date of the orientation checklist. In addition, document the member's entry into upgrade training, initial evaluation results, and periodic evaluations of training progress to include CDC progress. Information on extensions, waiver requests, or breaks in training should be clearly documented. Document on the AF Form 623a any decertification proceedings, including dates, reasons for decertification, and other applicable information. Accomplish an initial evaluation when a new person arrives to the unit or when an individual changes duty positions. Document all other actions pertaining to training IAW AFI-36-2201. **NOTE:** Templates for documentation of orientation, initial upgrade training brief, upgrade training documentation, sample job description review, and etcetera are housed in AFTR.