

UW HEALTH JOB DESCRIPTION

BIOMEDICAL ENGINEERING SPECIALIST

Job Code: 410079	FLSA Status: Exempt	Mgt. Approval: E. Nilles	Date: October 2023
Department: Supply Chain - Healthcare Technology Mgt		HR Approval: S. Whitlock	Date: October 2023

JOB SUMMARY

The Biomedical Engineering Specialist maintains medical equipment through the effective use of the UW Health Medical Equipment Management Plan. Demonstrates a proficiency in engineering skills and tasks associated with the installation, maintenance, calibration, and repair of complex biomedical equipment. Capable of educating others including clinical staff related to the technical integration, operation, and maintenance of the device/system. Interprets and provides recommendations on codes and directives from organizations such as AAMI, ANSI, TJC, NFPA, UL, OSHA, and CDC.

The Specialist is responsible for providing primary support in troubleshooting and repairing sophisticated medical equipment and systems. The equipment includes a wide variety of electrical, pneumatic, and mechanical equipment used for life monitoring and life support. Management of the equipment must ensure its immediate availability, accuracy, and reliability.

The position provides a unique capability within the department because of the required engineering background and knowledge of advanced medical equipment and systems. The incumbent independently determines job projection methods based on knowledge and experience with medical equipment and sound engineering principles. The job duties can vary due to changing conditions, with problems arising due to advances in technology and clinical care.

The incumbent has contact with equipment manufacturers' personnel such as technical support, designers, product managers and applications specialists. These contacts involve both giving and receiving information and advice on equipment design, maintenance, and repair.

Work is performed independently in various settings including critical patient care areas such as operating rooms and intensive care units as well as bench and in-shop locations. This position keeps accurate records of repairs made and follows up with customers on work performed or scheduled. This position provides training to lower-level technicians as well as clinical operators on the correct setup, calibration, and operation of patient care equipment.

The incumbent works with Faculty, Residents, and various other clinical staff to solve equipment needs. The Biomedical Engineering Specialist may be called for consultation on the underlying physical principals and functionality of medical equipment as situations dictate. The position also coordinates with UW Health's Planning Design and Construction Department, and/or outside contractors, on new construction or remodeling of patient care areas. Support is provided for Inpatient and Outpatient, as well as off-site locations where patient care is provided.

MAJOR RESPONSIBILITIES

- Coordinate, monitor, and supervise a preventive maintenance program for all equipment assigned to ensure compliance.
- Determine practicality and cost-effectiveness of utilizing vendors or UW Health HTM in-house staff.
- Perform and record preventive maintenance of assigned equipment through periodic performance checks and measurements based on the UW Health Medical Equipment Management Plan.
- Diagnose defective medical equipment and implement repairs without direct supervision in both shop and critical care settings including operating rooms, trauma units, emergency rooms, and various other patient care areas.
- Keep accurate records of all maintenance activities performed on assigned medical equipment and update the department database of this record of service, completely and promptly.
- Have a working knowledge of all applicable codes and standards for maintaining medical equipment including those issued by The Joint Commission and other accrediting agencies.
- Operate sophisticated calibration and test equipment.
- Repair/calibrate life support and other critical medical equipment and systems.
- Monitor the procedures and implementation of the electrical safety program for portable electrical equipment and the electrical power supply used in operating rooms and treatment areas.
- Install and maintain various devices used to interface critical medical equipment data into the UW Health electronic medical record system (EPIC)
- Ensure urgent device corrections, and equipment recalls are acted upon in a timely manner to ensure safety of patients, visitors, and staff.
- Ensure medical equipment involved in or suspected to be involved with adverse patient interactions is processed.
- Perform repairs and configuration of critical care patient monitoring computer systems; central stations, displays, database servers, enhanced web servers, ADT interface servers, alarm prioritizing and routing servers.
- Design and coordinate evaluation procedures for new equipment. Determine purchase specifications, evaluate, and make recommendations on competitive bids.
- Create and provide in-service education materials for new equipment and coordinate equipment educational programs as needed.
- Assist with creating and conducting new device implementation, training, and workflow enhancements for various groups.
- Maintain and configure medical equipment alarm notification equipment, interfaces, and systems.

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- Maintain and configure electronic ICU servers and associated network equipment.
- Perform repairs and configuration of data capture devices that interface clinical diagnostic and treatment equipment to institutional medical recording and data acquisition systems.
- Participate in planning of new operating and procedure areas such as intraoperative radiotherapy, MRI, and neuro-radiology intervention, as well as any facility upgrades, modifications, or renovations.
- Provide outstanding customer service. Contact department customers and provide device repair status and estimated time of return. Resolve customer complaints in a diplomatic and professional manner.
- Provide guidance to clinical users on proper use and care for diagnostic, treatment, and monitoring equipment.
- Demonstrate correct setup, calibration, and operation of patient care equipment to clinical staff as required.
- Assist in the installation of medical equipment and systems by collaborating with clinical users in the selection of proper equipment for their needs.
- Provide teaching and assistance to UW Health Biomedical Engineering technicians when requested.
- Advises departmental committees on critical equipment status and needs, equipment upgrades and/or emerging technologies, equipment failures, recalls and corrective actions.
- Drive continuous improvement strategies in a wide array of department specific initiatives.

All duties and requirements must be performed consistent with the UW Health Service and Performance Standards.

JOB REQUIREMENTS

Education	Minimum	Associates of Applied Science in HTM / Biomedical Engineering or Completion of DOD Biomedical Technician training. Two (2) years of previous Biomedical Engineering Technician experience in lieu of education, in addition to experience below.
	Preferred	Bachelor's Degree in Engineering or relevant field.
Work Experience	Minimum	Three (3) years previous experience as a Biomedical Technician in a Healthcare setting.
	Preferred	<ul style="list-style-type: none"> • Eight (8) years previous experience as a Biomedical Technician in a Healthcare setting. • Academic Medical Center experience. • Education and training - Leadership experience.
Licenses & Certifications	Minimum	Original Equipment Manufacturer (OEM)
	Preferred	Certification as a Biomedical Electronic Technician (CBET)
Required Skills, Knowledge, and Abilities		<ul style="list-style-type: none"> • Adept at teaching and mentoring others. • Advanced experience working in a clinical environment. • Knowledgeable about local and national life safety and regulatory codes. • Project management knowledge and experience. • Thorough knowledge of electronic theory including advanced digital systems. • Ability to troubleshoot and repair complex failures in medical equipment. • Thorough knowledge of sophisticated electronic test equipment and applications. • Knowledge of physiological and medical terminology. • Ability to understand and follow established preventive maintenance procedures. • Ability to maintain reports utilizing a computerized maintenance management system (CMMS) • Basic knowledge of IT (Information Technology) terminology, setup, and configuration. • Strong customer service skills. • Ability to diagnose and resolve problems over the telephone using unskilled non-technical or clinical staff for assistance.

AGE SPECIFIC COMPETENCY (Clinical jobs only)

Identify age-specific competencies for direct and indirect patient care providers who regularly assess, manage and treat patients.

Instructions: Indicate the age groups of patients served either by direct or indirect patient care by checking the appropriate boxes below. Next,

Infants (Birth – 11 months)		Adolescent (13 – 19 years)
Toddlers (1 – 3 years)		Young Adult (20 – 40 years)
Preschool (4 – 5 years)		Middle Adult (41 – 65 years)
School Age (6 – 12 years)		Older Adult (Over 65 years)

JOB FUNCTIONS

Review the employee's job description and identify each essential function that is performed differently based on the age group of the patient.

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PHYSICAL REQUIREMENTS				
Indicate the appropriate physical requirements of this job in the course of a shift. <i>Note: reasonable accommodations may be made available for individuals with disabilities to perform the essential functions of this position.</i>				
Physical Demand Level		Occasional Up to 33% of the time	Frequent 34%-66% of the time	Constant 67%-100% of the time
	Sedentary: Ability to lift up to 10 pounds maximum and occasionally lifting and/or carrying such articles as dockets, ledgers and small tools. Although a sedentary job is defined as one, which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.	Up to 10#	Negligible	Negligible
	Light: Ability to lift up to 20 pounds maximum with frequent lifting and/or carrying of objects weighing up to 10 pounds. Even though the weight lifted may only be a negligible amount, a job is in this category when it requires walking or standing to a significant degree.	Up to 20#	Up to 10# or requires significant walking or standing, or requires pushing/pulling of arm/leg controls	Negligible or constant push/pull of items of negligible weight
X	Medium: Ability to lift up to 50 pounds maximum with frequent lifting/and or carrying objects weighing up to 25 pounds.	20-50#	10-25#	Negligible-10#
	Heavy: Ability to lift up to 100 pounds maximum with frequent lifting and/or carrying objects weighing up to 50 pounds.	50-100#	25-50#	10-20#
	Very Heavy: Ability to lift over 100 pounds with frequent lifting and/or carrying objects weighing over 50 pounds.	Over 100#	Over 50#	Over 20#
Other - list any other physical requirements or bona fide occupational qualifications not indicated above:				

Note: The purpose of this document is to describe the general nature and level of work performed by personnel so classified; it is not intended to serve as an inclusive list of all responsibilities associated with this position.