

**Scope of Work in Hospitals: Biomedical Technician vs. Biomedical Engineer**  
(Expanded)

Task / Responsibility	Biomedical Technician	Biomedical Engineer
<b>1. Equipment Installation</b>	Assist vendors during equipment setup and connection; follow basic manuals	Lead the technical validation of installations, ensure compliance with layout plans, integrate with hospital systems (electrical, networking, gas pipeline)
<b>2. Repair &amp; Troubleshooting</b>	Basic repair of equipment like suction machines, BP apparatus, nebulizers, etc.	Advanced troubleshooting of critical care systems (ventilators, dialysis machines, monitors); lead root-cause analysis
<b>3. Preventive Maintenance</b>	Routine cleaning, part replacement, lubrication, and functional checks	Design and implement PM schedules based on OEM guidelines; supervise technicians; optimize PM workflow for hospital efficiency
<b>4. Calibration</b>	Perform basic calibration using standard tools	Perform advanced calibration using biomedical simulators and traceable standards; ensure accuracy for clinical diagnostics
<b>5. Documentation</b>	Fill logbooks and equipment service records	Develop SOPs, create maintenance manuals, prepare audit-ready reports and hospital equipment master lists
<b>6. Equipment Inventory Management</b>	Record daily maintenance tasks and tag faulty equipment	Design and manage CMMS (Computerized Maintenance Management System); analyze data to optimize inventory and asset lifecycle



<b>Task / Responsibility</b>	<b>Biomedical Technician</b>	<b>Biomedical Engineer</b>
<b>7. Procurement Support</b>	Help list damaged tools or minor parts needed for repair	Prepare detailed technical specifications for tenders; perform comparative analysis of vendors and technologies
<b>8. Hospital Infrastructure Planning</b>	Not applicable	Actively involved in OT, ICU, CSSD, and NICU planning; create equipment layouts, assess power and gas line requirements
<b>9. Clinical Integration</b>	Not applicable	Ensure proper integration of equipment with hospital IT systems (PACS, HIS, LIS); support EMR interface
<b>10. Biomedical Waste Handling</b>	Limited involvement	Design safe disposal processes for contaminated and expired equipment in compliance with biomedical waste rules
<b>11. User Training</b>	Give brief device demonstrations to nurses and staff	Conduct full user training, safety briefings, and develop training modules with documentation
<b>12. Compliance &amp; Quality Assurance</b>	No formal involvement	Ensure compliance with ISO 13485, FDA, CE, and Nepal MoHP regulations; prepare for NABH or international hospital accreditation
<b>13. R&amp;D and Innovation</b>	Not involved	Research new technologies, develop or modify devices, innovate low-cost medical solutions suited for Nepal's context
<b>14. Project Management</b>	N/A	Lead biomedical equipment projects: planning, budgeting, execution, and vendor coordination



<b>Task / Responsibility</b>	<b>Biomedical Technician</b>	<b>Biomedical Engineer</b>
<b>15. Risk Assessment</b>	N/A	Conduct risk analysis on high-alert equipment; recommend mitigation strategies to hospital leadership
<b>16. Budget Planning</b>	N/A	Assist hospital administration in budgeting for biomedical infrastructure and upgrades
<b>17. Interdisciplinary Collaboration</b>	Occasionally coordinates with nurses	Collaborates with doctors, IT engineers, electrical engineers, infection control teams, and management
<b>18. Leadership and Supervision</b>	Works under supervision	Leads biomedical department; supervises technicians and interns; reports to medical superintendent or hospital board