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<b>Job Title:</b>	Lab Electronics Technician
<b>Department:</b>	Institute for Quantum Computing (IQC)
<b>Reports To:</b>	Associate Director, IQC Technology Services
<b>Jobs Reporting:</b>	None
<b>Salary Grade:</b>	USG 7 (37.5 hours/wk)
<b>Effective Date:</b>	2025-11

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## **Primary Purpose**

The Institute for Quantum Computing’s Technology Services (TS) team supports researchers who conduct leading-edge work in quantum information. TS offers a broad spectrum of services—including electronic and mechanical prototype fabrication, computing support, visual technologies, 3-D printing, a general-chemistry laboratory, and a robust digital infrastructure for data management and software tools. To facilitate access, TS maintains and supervises a fully equipped lab space for IQC investigators. As an integral part of IQC, the TS team’s in-house expertise enables rapid design and fabrication of research prototypes while creating new shared capabilities and enhancing existing ones across the research environment.

The Lab Electronics Technician supports hands-on prototype fabrication, operates and maintains the lab’s equipment, and provides technical guidance to IQC researchers—facilitating rapid research prototyping and dependable operation of the IQC Technology Services Lab.

This role works closely with the IQC Senior Electronics Technician [SET].

## **Key Accountabilities**

### **Electronics Fabrication and Equipment Support**

- Operate circuit-board milling and other fabrication equipment under SET guidance.
- Prepare component layouts in AutoCAD or PCB-CAD according to established instructions.
- Perform routine checks and upkeep of shared lab equipment.

### **IQC Researcher Support**

- Serve as the daily technical resource in the TS lab, guiding researchers on safe and effective use of tools and space.
- Provide on-site assistance with design, assembly, and troubleshooting of prototype electronics.

**Technical Construction and Customization**

- Build, assemble, and package enclosures and shielding using hand tools; demonstrate strong mechanical dexterity.
- Assist in constructing custom-built computer and instrumentation hardware for research projects.

**Instrumentation Testing and Service**

- Test and troubleshoot analog and digital research instruments; record results and flag issues for senior staff.
- Perform basic electrical safety checks and documentation for equipment certification.

**Process Development and Documentation**

- Draft and update Standard Operating Procedures (SOPs) for lab equipment; ensure clarity and consistency.
- Identify improvement opportunities and report them to the team.

**Lab Operations and Safety**

- Maintain inventory and perform monthly safety inspections with the SET.
- Ensure daily cleanliness and order; adhere to all university health and safety policies.

**Other Duties**

- Perform additional tasks as assigned by the Associate Director or SET.

**Required Qualifications****Education**

- Minimum 2-year diploma from an accredited Electronics Engineering/Technology or Electronics Technician program.

**Experience**

- 1 year of experience as an Electronics Technician.
- Proven ability to design and work with analog and digital electronics.

- Proficiency with industry-related measurement instruments.
- Familiarity with hardware design procedures and specialized software tools for digital electronics.

### **Knowledge/Skills/Abilities**

- Basic Electronics Design - Capture simple schematics, run basic simulations, and create preliminary PCB layouts.
- Instrument Interface Basics - Understand computer-to-measurement-device connections (USB, GPIB, Ethernet).
- Problem-Solving & Analysis - Organize tasks, troubleshoot issues, and analyze data to identify root causes.
- Circuit Fundamentals - Work with low- to mid-speed digital logic and simple analog blocks (amplifiers, filters).
- Hardware Implementation - Assemble and test small electronic systems from schematics to prototypes.
- PCB Work - Design, review, and solder PCBs; perform component placement and inspection.
- Prototyping - Build and test prototypes; document performance and required changes.
- CSA/Evaluation Support - Assist with basic electrical safety checks and documentation for equipment certification.
- Hands-On Troubleshooting - Diagnose and fix problems in electronic and mechanical assemblies.
- Time Management - Prioritize tasks and meet deadlines while juggling multiple assignments.
- Team & Independent Work - Collaborate with peers and work autonomously and proactively suggest process improvements.
- Communication - Clearly explain technical concepts to technical and non-technical stakeholders.
- General office tools – Basic proficiency in using Microsoft Office (M365); quick learner of new software.

### **Nature and Scope**

- **Contacts:** Requires the ability to communicate with all IQC staff, faculty, and students (primarily graduate level) who seek services from the IQC TS team. Communication abilities must be geared to both technical and non-technical individuals.
- **Level of Responsibility:** Defined duties performed with supervisory support.

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- **Decision-Making Authority:** Operational and procedural decisions are reviewed and made collaboratively by the team with the guidance of the Associate Director, IQC Technology Services.
  - **Physical and Sensory Demands:** Ability to work in a distracting environment while maintaining close attention to detail; occasional lifting and carrying.
  - **Working Environment:** Electronics shop with mechanical fabrication equipment (drill-press, cutters, hand tools, desktop CNC). Laboratory conditions typical of scientific research, with occasional exposure to chemicals. Presence required during working hours, primarily at IQC's QNC Building with occasional assignments at the RAC Building.

*\* All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*