GENERAL PURPOSE
Under general supervision, provides vocational instruction support in the electrical/electronics trades program, including networking and robotics; prepares equipment, materials, supplies and training aids for classroom instruction and student laboratory assignments; provides instruction and assists students in the proper use and operation of computer and shop equipment and tools; maintains a clean, safe and orderly learning environment; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS
Vocational Instructional Technician – Electrical/Electronics is responsible for assisting in maintaining, operating and providing support for the District’s electrical, electronics, networking and robotics instructional program, including ordering and maintaining an inventory of equipment, tools, supplies and materials and preparing equipment, materials, tools and training aids for class instruction, demonstrations and student laboratory exercises. Incumbents perform a variety of support functions to assist faculty in the general operation of the electrical/electronics instructional program and may supervise the work of assigned work study students. Work assigned requires a detailed knowledge of subject areas applicable to the specific trades program and the ability to provide instruction to others in an effective manner.

ESSENTIAL DUTIES AND RESPONSIBILITIES
The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this class.

1. Installs, repairs, maintains and rebuilds electrical and electronic equipment, training boards, electrical/cable plant media and overhead projectors; mounts hardware, threads suspension pipe and runs audio/video conduit and cables; fabricates electrical training equipment for student use, including display boards, wire racks and network raceways.

2. Wires, installs network devices such as routers, hubs and switches, configures and maintains a standalone LAN for the networking laboratory; installs cable plant media and tests for faults; punches down patch panels and jacks.

3. Assists instructors in planning for and conducting class sessions; provides input on class session content and laboratory exercises; prepares samples and demonstrates techniques, processes and methods for students; tutors students in small groups or on an individual basis on class session material and demonstrated techniques, processes and methods; answers questions and monitors the work of students in completing homework and lab assignments; provides instruction on the proper
and safe use of equipment, tools and materials; issues tools and supplies to students for classroom and laboratory use.

4. Prepares equipment, materials, supplies, tools and training aids required for class sessions and student laboratory assignments; as necessary, inspects, troubleshoots, rebuilds, repairs, services and/or fabricates items required; refers to manuals, schematics, wiring diagrams and uses diagnostic tools to determine and repair causes of equipment malfunction; checks out and organizes tools required for student and laboratory use; inspects tools for damage and defects; recommends or sends items out for repair.

5. Supervises work study students assigned to the program; coordinates and assigns work; monitors and provides instruction on safe work practices and procedures; provides performance feedback.

6. Prepares requisitions and places orders to maintain an inventory of shop equipment, tools, materials and supplies; picks up ordered items from vendors when necessary; maintains security of lab equipment, materials and facilities; opens and closes shop.

7. Maintains computer, systems and software applicable to the program; performs general administrative and clerical duties in support of program activities, including: forecasting and monitoring expenditures, tracking budget accounts, and maintaining fiscal records; maintaining purchasing and inventory records; preparing and submitting time cards for student workers; maintaining program-specific databases.

8. Assists in maintaining a safe, clean and orderly learning environment to ensure the health and safety of instructors, students, work study assistants and staff; maintains, inspects, repairs and cleans shop facilities and equipment or arranges for their repair and/or replacement; ensures proper storage and handling of hazardous materials.

OTHER DUTIES
1. Maintains and ensures quality performance of an amateur radio station; sets up and prepares the station for demonstrations and student use; ensures readiness for emergency use.

QUALIFICATIONS

Knowledge of:
1. Basic principles of electricity and electronic theory.
2. Equipment, tools, Electrical Codes, wiring schematics, hardware and materials common to the trade.
3. Standard principles of network design, including topologies and protocols.
4. Network devices such as hubs, routers and switches and methods and practices in their installation, testing and configuration.
5. Cable plant media and wiring standards.
6. Basic PLC programming principles and languages.
7. Standard uses and applications of AutoCAD software applications.

8. Operation and maintenance of a wide variety of hand, power and shop tools and equipment common to the trade.

9. Safe work methods and safety regulations pertaining to the work.

10. Shop mathematics.

11. Federal, state and local laws and regulations pertaining to the handling and disposal of hazardous materials and clean air requirements.

12. Methods and practices of student instruction and tutoring.

13. Administrative practices and procedures, including purchasing and record keeping.

**Ability to:**

1. Demonstrate work processes, methods and techniques to students clearly and effectively.

2. Operate and maintain a wide variety of hand, power and shop tools and equipment used in the work.

3. Install, configure, troubleshoot and repair networks and network devices.

4. Follow, demonstrate and enforce safe work practices, safety precautions and safety policies and procedures when working with students and student workers.

5. Estimate necessary materials and equipment to complete assignments.

6. Read and interpret manuals, schematics, exploded view diagrams, specifications and drawings applicable to the work.

7. Use shop mathematics to make calculations.


9. Organize, set priorities and exercise sound judgment within areas of responsibility.

10. Organize and maintain records and files.

11. Communicate clearly and effectively, both orally and in writing.

12. Understand and follow written and oral instructions.

13. Safely operate fork lifts, pallet jacks, hand trucks and other equipment.

14. Use tact, discretion, courtesy and patience in dealing with sensitive and difficult students and situations.

15. Establish and maintain effective working relationships with instructors, faculty, staff, vendors, students, the public and others encountered in the course of work.
**Education, Training and Experience:**

A typical way of obtaining the knowledge, skills and abilities outlined above is an Associate's degree in electronics or a closely related field; and two years of electrical, electronics and/or network installation and maintenance experience; or an equivalent combination of training and experience. A bachelor's degree in industrial arts is highly desirable.

**Licenses; Certificates; Special Requirements:**

A valid California driver's license and the ability to maintain insurability under the District’s vehicle insurance policy.

A valid fork lift operator certification or the ability to obtain certification within six months of employment.

A current Cisco network academy certification.

An advanced class amateur radio license or general radio telephone license or the ability to obtain a license within six months of employment.

**PHYSICAL AND MENTAL DEMANDS**

The physical and mental demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

**Physical Demands**

While performing the duties of this class, an employee is regularly required to use hands repetitively to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee is frequently required to stand and talk or hear conversations and equipment signal warnings. The employee is frequently required to walk; sit; climb or balance; stoop, kneel, crouch or crawl.

The employee must frequently lift and/or move up to 50 pounds and occasionally lift and or move up to 100 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception and the ability to adjust focus.

**Mental Demands**

While performing the duties of this class, the employee is regularly required to use written and oral communication skills; read and interpret documents and information; analyze and solve problems; observe and interpret people and situations; use math/mathematical reasoning; learn and apply new information or skills; perform highly detailed work with constant interruptions and interact with District instructors, faculty, staff, students, the public and others encountered in the course of work.
WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

The employee works in a shop and laboratory environment near moving mechanical equipment and parts. The employee is regularly exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.