

ILLINOIS DEPARTMENT OF CENTRAL MANAGEMENT SERVICES  
CLASS SPECIFICATION

ELECTRONICS TECHNICIAN

POSITION CODE: 13360  
Effective: 12-1-02

INTRODUCTION:

This class includes those positions which service electronic equipment, make electronic circuit repairs or adjustments which affect longevity, accuracy and proper function of electronic equipment. Included work involves maintenance, servicing, repair and calibration of electronic equipment such as air pollution analyzers, instrument motors, computer logic circuitry, radiological monitoring hardware and audiological hardware.

Electronics Technicians possess a knowledge of electronic circuitry sufficient to understand the operation of the various component parts, and how these parts work together in the whole circuit. Circuit operation is explained in service manuals, and service literature, often accompanied by specific test procedures and schematic diagrams which specify normal circuit test measurements. A step-by-step calibration procedure is generally furnished in the service manuals for equipment which would normally require periodic adjustment and testing. Regular use of test equipment, such as an oscilloscope, signal generator, distortion analyzer, volt-ohm-milliammeter (VOM), is a characteristic feature of this type of work, along with a knowledge of trouble shooting procedures to locate circuit faults.

Electronic Engineering positions differ from Electronic Technicians in their emphasis on designing or evaluating circuits or systems through the application of physical/mathematical models and engineering principles and techniques. The Electronics Technician may build electronic circuits to solve a given need by adapting existing circuitry obtained from a circuit handbook. The technician's approach is practical, one of knowledgeably adjusting component values, signal levels and so forth, until the circuit operates reliably. Use is made of Ohm's law, and various other practical tables and formulas, to assure that components operate within limits of published specifications.

Electricians are concerned with installing, altering, maintaining and repairing electrical power systems, equipment and fixtures, in conformance with the National Electrical Code and applicable local codes. Electronics Technicians in contrast will install and maintain low voltage wiring to interconnect communications equipment, alarm systems, intercoms, closed circuit television systems, etc. The Electronics Technician class is broadly inclusive of electronic equipment maintenance, repair, and adjustment. Positions which specialize in performing maintenance, servicing and repair of radio transmitting equipment may be considered for placement in the Communications Equipment Technician series.

DISTINGUISHING FEATURES OF WORK:

Under general supervision, performs maintenance, repair, calibration and retrofitting of laboratory and field electronic equipment.

## ELECTRONICS TECHNICIAN (Continued)

## ILLUSTRATIVE EXAMPLES OF WORK:

1. Diagnoses problems by referring to manuals and service updates, uses test equipment such as an oscilloscope, signal generator, distortion analyzer and volt-ohm-milliammeter. Repairs are made using hand tools such as wrenches, pliers and soldering irons.
2. Repairs, retrofits, maintains and calibrates radiation detection instruments such as CDV-705 loudspeaker, CDV-0457 demonstration unit, CDV-750 dosimeter charger, CDV-700, CDV-711, CDV-715, CDV-720 survey meter and the CDV-781 aerial survey meter.
3. Repairs, retrofits, maintains and calibrates sulfur dioxide generator 8500, TECO sulfur dioxide analyzer, Ambient Air Monitor Motor and other air pollution calibration and monitoring devices.
4. Repairs, installs and maintains in-house closed circuit TV and audiovisual systems.
5. Evaluates and makes recommendations for the purchase of new auditory training equipment; uses electronic test equipment for performance testing and evaluation of individual and group auditory devices; modifies, adapts, installs, and repairs all auditory training equipment. Designs, develops and assembles specialized electronic and electromechanical devices for the instructional needs of deaf children; modifies various audiovisual and television equipment to provide for the special needs of deaf children.
6. Performs other duties as required or assigned which are reasonably within the scope of the duties enumerated above.

## DESIRABLE REQUIREMENTS:

Education and Experience

Requires knowledge, skill and mental development equivalent to the completion of four years of high school supplemented by two years of technical school with coursework in electricity and electronics.

Knowledges, Skills and Abilities

Requires working knowledge of practical electronics theory and equipment circuitry and operation, maintenance and repair.

Requires working knowledge of electronic testing equipment operation and application in diagnostic and calibration procedures.

Requires ability to read schematic diagrams of electronic circuitry in order to gain an understanding of circuit operation, normal performance characteristics, and diagnostic and adjustment procedures.

Requires an experienced ability to recognize and correct electronic equipment malfunctions.

Requires eye-hand coordination and fine motor skills in the use of hand tools to effect repairs to equipment.

Work may necessitate occasional call up outside of regularly scheduled work period in order to assure continuity of agency services.

In addition to English verbal and written skills, candidates may be required to translate, speak and write a foreign language at a colloquial skill level. Some positions may require manual communication skills.