

## ELECTRONICS TECHNICIAN IV

### DESCRIPTION OF WORK

This is developmental work in the design and fabrication of electronics apparatus to perform novel and innovative functions and skilled work in the repair of critical, complex electronic systems. Employees in this class consult with faculty members desiring the construction of electronic teaching or research devices to determine project parameters, and design and construct specialized one-of-a-kind electronic devices. Design work borders on electronics engineering and is distinguished from that of lower-level classes because of job requirements to design and construct electronic circuits and devices to perform unique or innovative functions where reliance on standard circuit designs is minimal. Maintenance work is distinguished from that of lower-level technicians because of added responsibility for the proper operation of larger electronic systems composed of a greater variety of interconnected electronic subsystems and devices where downtime of the system would have extensive effects on agency or departmental operations. Work is evaluated through the effectiveness of projects designed and constructed, and analysis of equipment reliability. Work is performed under administrative supervision.

### EXAMPLES OF DUTIES PERFORMED

Confers with faculty desiring electronic equipment to aid in research or teaching, determines the purpose of the needed devices and any operating parameters, lays out block diagrams of devices and circuits, and designs circuits to perform unique or novel and unusual functions.  
Designs or redesigns computer control circuitry to improve performance.  
Modifies electronic devices to improve performance or to customize it for special use.  
Recommends overhaul or replacement of electronic devices, subsystems, and systems.  
Establishes preventive maintenance programs to ensure continued electronic system operation.  
Confers with faculty desiring to purchase electronic equipment, recommends type and evaluates, and installs equipment upon arrival.  
May supervise lower-level electronic technicians.  
Compiles a library of technical literature, reads same to keep electronics knowledge up to date.  
Troubleshoots and repairs large, complex electronic systems made up of a wide variety of unique, individual electronic devices to subsystems.  
Performs related duties as required.

### RECRUITMENT STANDARDS

#### Knowledges, Skills, and Abilities

Considerable knowledge of electronic principles.  
Considerable knowledge of mathematical principles as applied to electronic circuit and analysis.  
Considerable knowledge of the fundamentals of physics as applied to electronics.  
Working knowledge of the uses of standard and specialized electronic testing equipment.  
Ability to modify electronic circuitry or design electronic circuits to perform unusual or innovative functions.  
Ability to perform maintenance on non-standard electronic devices and the most complex electronic systems which are often not well documented when effectiveness and speed of repair are necessary.  
Ability to develop innovative electronic troubleshooting and testing procedures.  
Ability to read and comprehend electronics periodicals and textbooks on electronics advances and apply new theories and components to design work.

#### Minimum Education and Experience

Associate's degree in electronics from an appropriately accredited institution and three years of progressive experience in the repair and maintenance of complex electronic systems including responsibility for the design of electronic apparatus; or an equivalent combination of training and experience.