

*Code: 2183*

*Title: INSTRUMENTATION AND CONTROL SPECIALIST - PRINCIPAL*

**SUMMARY:** Leads and participates in the repair, maintenance, installation, calibration and modification of field environmental instrumentation and laboratory analytical equipment. It is distinguished from the Instrumentation & Control Specialist-Senior by its lead responsibilities.

**DUTIES/RESPONSIBILITIES:** (Work assignments may vary depending on the department's needs and will be communicated to the applicant or incumbent by the supervisor.)

Leads and participates in troubleshooting, repairing, maintaining and installing process control systems such as programmable logic controllers, chart recorders, direct reading gauges, gas analyzers, density analyzers, differential pressure transmitters, process control valves, chemical additions systems and laboratory analytical equipment;

Plans, assigns and reviews the work of assigned staff;

Assists in the preparation of preliminary and long-range plans, cost estimates and the departmental budget;

Evaluates automatic process control equipment for its ability to meet the operational needs of the area of assignment and recommends modifications and/or replacement;

Monitors warranty repair and service contracts for county owned equipment;

Oversees and inspects the routine diagnostics, calibration and component level repairs of electrical and pneumatic test equipment, which may include: carbon monoxide analyzers, oxides of nitrogen analyzers, sulfur dioxide analyzers, particulate samplers, dichotomous samplers, calibrations systems, data loggers, and meteorological equipment using shop manuals, schematics and ladder and loop diagrams;

Oversees and inspects the repair, maintenance and installation of mechanical, electronic, pneumatic and micro processor based instrumentation such as magnetic and sonic flow meters, bubbler tube level metering systems, PH meters and turbidity meters;

Monitors and maintains safety precautions and hazards following federal, state and county guidelines including control of stored energy, working with and around methane, hydrogen sulfide, chlorine, sulfur dioxide, cryogenics, acids, caustics, sewage, lockout procedures and proper use of protective equipment;

Documents work performed by self and assigned staff for management review in manual and automated systems;

Develops and maintains preventive maintenance schedules;

May write routine computer programs or modify existing software for troubleshooting and repair of instrumentation systems.

#### **KNOWLEDGE & SKILLS:**

Knowledge of:

- effective leadership practices and techniques;
- principles, practices, and techniques of mechanics, electricity, pneumatics, hydraulics, electronics and mathematics of industrial process control instrumentation and laboratory analytical equipment;
- equipment and tools used in the repair and maintenance of mechanical, electronic and pneumatic instrumentation components;
- operation, repair, maintenance, installation and calibration of process control systems and components and laboratory analytical equipment;
- hazards and safety practices according to federal, state and county guidelines;

- analog and digital control systems and devices, digital electronic theory, terminology and application;
- word processing and spreadsheet applications, data acquisition systems and microcomputer systems as used in an analytical laboratory.

Skill in:

- reviewing and evaluating the work of assigned staff;
- monitoring the repair, maintenance, installation and calibration of process control instrumentation and laboratory analytical equipment along with developing and maintaining preventive maintenance schedules;
- monitoring and maintaining a safe work environment;
- reading and interpreting shop operation manuals and schematic diagrams;
- using hand tools and specialized tools and equipment used in the calibration and repair of electronic process control components;
- assisting in budget preparation;
- troubleshooting and repairing microcomputer systems and components.

MINIMUM QUALIFICATIONS:

EITHER:

(1) An Associate of Applied Science (A.A.S.) Degree or certificate for Direct Employment from an accredited college or university in electronics technology instrumentation and process control and two years of experience in the repair and maintenance of laboratory or process control instrumentation in an industrial, environmental or laboratory setting plus one year of lead or supervisory experience which may be concurrent with general experience.

OR:

(2) Four years of journey-level experience in the repair, maintenance, installation, operation or calibration of electronic instrumentation or industrial/laboratory process controls and instrumentation including one year in a lead or supervisory capacity.

OR:

(3) Two years of experience with Pima County as an Instrumentation & Control Specialist-Senior or Instrumentation Technician-Senior.

OTHER REQUIREMENTS:

Licenses and Certificates: All positions require a valid Arizona Class D driver license at the time of application. Failure to maintain the required licensure shall be grounds for termination.

Physical/Sensory Requirements: Some positions may carry the risk of exposure to infectious diseases, asbestos or wastewater and sewage products, therefore special medical screening prior to or during employment may be necessary to assure employee health and safety and may require exposure to various extremes of weather and temperature and working in confined areas to access equipment which may require the proper wearing of individual safety and protective equipment. All positions require the ability to lift up to seventy-five pounds for brief periods.

This class specification is intended to indicate the basic nature of positions allocated to the class and examples of typical duties that may be assigned. It does not imply that all positions within the class perform all of the duties listed, nor does it necessarily list all possible duties that may be assigned.