

**CLASS SPECIFICATION**  
**Electronic Systems Technician**

FLSA Status: Covered  
Union Representation: Professional and Technical Employees (PTE)

**GENERAL PURPOSE**

Under general supervision, designs, implements, maintains and operates computerized electronic and communication systems for monitoring sewer flow and systems, pump stations and related environmental factors; develops computer software applications integrated with hardware designs for complex technical equipment used in electronic, electro-pneumatic and electro-mechanical instrumentation systems; designs, installs, operates, troubleshoots and modifies electronic and related equipment; and performs related duties as assigned.

**DISTINGUISHING CHARACTERISTICS**

Electronic Systems Technicians maintain, operate, troubleshoot and repair the City's environmental monitoring data acquisition system to collect, monitor, report and manage data from rain fall, sewer level, sewer flow, and pump station alarms.

Electronic Systems Technician is distinguished from engineering and other related classes by the performance of technical duties requiring knowledge of advanced computer programming language, electronic instrumentation and communication systems.

**ESSENTIAL DUTIES AND RESPONSIBILITIES**

Any one position in this class may not perform all the duties listed below, nor do the listed examples of duties include all similar and related duties that may be assigned to this class.

1. Designs, develops, maintains and operates computer hardware and software for telemetry communications and instrumentation systems for sewer system operation, pump station alarms and environmental monitoring.
2. Develops operation and maintenance procedures for sewer system and environmental monitoring.
3. Designs, builds and upgrades telemetry cabinets, maintains, troubleshoots and repairs telemetry and monitoring equipment; tests and calibrates instruments and records information. Researches suppliers and locates materials, electronic components, instrumentation, etc. for designing, maintaining and upgrading monitoring stations.
4. Provide emergency response for critical system failures and respond to emergencies as required.
5. Plans, organizes, prioritizes, and schedules processes and projects of varying durations; monitors and adheres to project budgets; communicates project information and requirements to consultants

and City personnel; reviews project plans for accuracy, completeness and compliance with City standards.

6. Provides training or guidance to other technical staff in the operation and maintenance of equipment, interconnection with other monitoring systems and uses of collected data; creates and maintains instruction and documentation manuals.
7. Performs special studies, surveys and reports as assigned to gather and analyze information relative to program area of assignment; presents findings and conclusions regarding trends, costs, problem areas and special conditions encountered.
8. Develop, design, and support data maintenance, user interface applications and reports used by City of Portland personnel for evaluation and reporting.
9. Maintains system records on remote monitoring stations; verifies correct operation of system; tests system for proper operation and data flow; investigates problems revealed by data reports and recommends or initiates corrections; writes confirmation reports on integrity of collected data.
10. Coordinates and participates in field installation of remote telemetry equipment, rain gauges, pump stations and sewer system monitors.
11. Verifies location of assets within the right-of-way, develops and maintains databases, reports and maps for Citywide reference.

## **MINIMUM QUALIFICATIONS**

### **Knowledge of:**

1. Mathematics, including algebra and trigonometry.
2. Basic electronic theory and digital electronics.
3. National Electric Code, power management and electrical systems.
4. Installation, operation, repair and maintenance of electrical, electronic and telemetry equipment and devices, including standard practices and procedures used in electric and electronic circuit design and installation.
5. Server class computer systems and peripherals, programming languages, operating systems, data structures, network communication protocols and DCL language applicable to assigned responsibility; and personal computer operation.
6. Digital radio communication systems and real-time operating system environments.
7. System failure analysis and resolution methods and techniques.

8. Basic project planning and management methods and techniques applicable to projects of varying durations.
9. General principles and practices of public administration, including purchasing, contracting and maintenance of public records.
10. Data-gathering and research methods.

**Ability to:**

1. Identify electronic components including resistor color code, capacitors and integrated circuits.
2. Program devices using highly structured programming language related to monitoring system.
3. Measure, collect, evaluate and interpret appropriate and applicable data, and ensure the proper maintenance of all required files, records, and documentation.
4. Perform electrical and electronic repair and assembly.
5. Follow safety procedures and safe work practices when climbing high ladders, making confined-space entries and working with and around low-voltage electrical equipment.
6. Operate vehicles, including vans and bucket trucks safely and according to applicable operating instructions.
7. Practices and procedures for setting up barricades for protection and traffic control around work sites.
8. Establish and maintain effective working relationships with coworkers, supervisors, other city employees, contractor representatives and the general public.
9. Prepare clear, concise and comprehensive reports, correspondence and other documents appropriate to the audience. Clearly present technical information in oral, written, graphic or other forms.
10. Understand, interpret, explain, and apply electrical and building codes, and policies applicable to assigned program responsibilities.
11. Exercise independent judgment to make sound decisions and recommendations regarding program assignments within established guidelines.

**Training and Experience:**

A typical way of obtaining the knowledge, skills and abilities outlined above is graduation from high school, trade school or vocational school, or GED equivalent; supplemented by courses in computer

science, electronics and electrical engineering; and two years of progressively responsible experience in the design, installation, repair and use of computerized electronic and electrical equipment and systems involved in the remote monitoring of flow and environmental factors; or an equivalent combination of training and experience.

**Licenses; Certificates; Special Requirements:**

A valid state driver's license.

Oregon Limited Energy Journeyman Electrician license.

Confined-space entry and bucket truck certification.

**PHYSICAL AND MENTAL DEMANDS**

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable accommodation will be evaluated on an individual basis and depend, in part, on the specific requirements for the job, the limitations related to disability and the ability of the hiring bureau to accommodate the limitation.

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**Class History:**

Adopted: 12-31-92

Revised: 04-03-95 Spec reviewed for supervisory language.

Revised: 07-01-01 Spec revised as part of the COPPEA classification and compensation study. Electronic Systems Technician (6160) class created from the following COPPEA classes:

3190 Electronics Systems Specialist

Revised: 08-01-06 Spec history revised to reflect pre-2001 COPPEA Study history. Spec formatting modified.

Revised: 08-07-06 Revised FLSA status from “Non-exempt” to “Covered.”

Revised: 04-11-08

June 2009 - Change Job Class number from 6160 to 30000401, due to system change.

July 2017 – Updated union name from COPPEA to PTE