



**Code: 6143**

Family: Operational Engineering  
Service: Operation and Construction  
Group: Engineering, Designing, and Structural  
Series: Sub-Professional Engineering

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## **CLASS TITLE: ENGINEERING TECHNICIAN IV**

### **CHARACTERISTICS OF THE CLASS**

Under general supervision, performs a full range of para-professional engineering work to support a variety of engineering projects in an assigned area of responsibility, and performs related duties as required.

This class works independently at the fully-functional level in the Engineering Technician series. Positions in the class series are allocated across various City departments in support of engineering work which may include but are not limited to projects involving the design, maintenance and construction of water mains or sewers, roads, bridges, street maintenance, traffic engineering and/or traffic control.

### **ESSENTIAL DUTIES**

- Inspects and reviews construction work and procedures for a variety of in-house and private construction projects (e.g., highways, filtration plants, pumping stations, tunnels, viaducts, public way, bridges, traffic management) to ensure compliance with City requirements and engineering specifications and standards and recommends project approvals
- Conducts investigations or inspections of construction sites or structures in response to citizen complaints, work orders, permit and/or certification requests (e.g., street resurfacing, sewer and water main maintenance, concrete and asphalt placements)
- Reviews electronic and as-built blueprints, sketches, and design plans to identify structures and ensure compliance with City codes and engineering principles
- Assists resident engineers on projects and in the research, planning, and implementation of new or improved engineering programs or projects or serves as resident engineer on less complex projects
- Reviews and approves permit requests for technical accuracy and compliance, and calculates fees (e.g., traffic, driveway, sewer, public way)
- Conducts field observations of traffic conditions for driveway permits
- Conducts field surveys and takes measurements to establish slopes, baselines, grade elevations and horizontal and vertical alignments at construction sites, driveways, alleys, sewers, etc.
- Checks forms and construction/street structures (e.g., concrete, sewers, curbs, gutters, street repavings, catch basins, earthwork, retaining walls) for compliance with engineering standards and City requirements
- Conducts surveys for the placement, adjustment, or removal of devices (e.g., traffic signs, cameras, traffic calming devices)
- Conducts dye testing, collects field samples of water and soil, and recommends cleaning and remediation efforts
- Oversees construction laborers performing manual labor to assist in the inspection and testing of water leaks and sewer mains
- Prepares mathematical calculations (e.g., dimensions, elevations, and stress) to ensure accuracy of field measurements

- Determines quantity of materials and cost estimates for a variety of construction projects (e.g., curb, gutter and street restoration)
- Monitors the functioning of water pipes with aquaphone/audio phone and sound level meter and performs fire flow and pitometer testing
- Utilizes drafting and design software programs (e.g., Computer Aided Design) and Geographic Information System (GIS) mapping technology to prepare and/or review plans, maps, schematics and drawings
- Utilizes Geographic Information System (GIS) mapping technology and analysis for physical space planning analysis
- Evaluates and interprets contract plans for street and roadway improvement projects from sketches and other data sources including field survey notes
- Maintains historical technical records and documents (e.g., plans, blueprints, as-builts, atlases) related to the City's infrastructure
- Provides technical information at hearings and legal proceedings, as required
- May train and advise less experienced Engineering Technicians, as required

**NOTE:** *The list of essential duties is not intended to be inclusive; there may be other duties that are essential to particular positions within the class.*

## MINIMUM QUALIFICATIONS

### Education, Training, and Experience

- Three years of paraprofessional engineering experience; or an equivalent combination of education, training, and experience

### Licensure, Certification, or Other Qualifications

- Some positions may require a valid State of Illinois driver's license
- Some positions may require the permanent use of an automobile that is properly insured including a clause specifically insuring the City of Chicago from accident liability

## WORKING CONDITIONS

- General office environment
- Exposure to outdoor weather conditions
- Exposure to hazardous conditions (e.g., construction sites)
- May perform in cramped or confined locations

## EQUIPMENT

- Standard office equipment (e.g., telephone, printer, photocopier, fax machine, calculator)
- Computers and peripheral equipment (e.g., personal computer, computer terminals, hand-held computer)
- Two-way radio
- Digital and surveillance camera
- Measuring tools (e.g., tape measure, measuring wheel, ruler, range pole)
- Equipment (e.g., sound sensor device, pressure gauge, dye, surveillance equipment, hoses)
- Personal protective equipment (e.g., hard hat, shoes, glasses, gloves, vest, pads)

- Safety devices or equipment (e.g., cones, barricades, ropes)

**PHYSICAL REQUIREMENTS**

- Some positions may require moderate lifting (up to 50 lbs)
- Ability to stand and walk for extended or continuous periods of time
- Ability to move one's hands and arms to grasp or manipulate objects

**KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS****Knowledge**

Moderate knowledge of:

- \*engineering design and construction principles, methods, practices, and procedures
- \*applicable testing and inspecting principles, methods, practices, and procedures applicable to area of assigned responsibility
- \*methods, materials, and techniques used in engineering
- \*surveying principles, methods, practices and procedures
- \*mathematical principles and applications
- \*safety principles, methods, practices, and procedures
- \*use of engineering drafting equipment and surveying instruments

Some knowledge of:

- \*automated design and computer-aided drafting software
- \*interpreting blueprints, design plans and specifications
- \*applicable federal, state, local laws, regulations and guidelines

Knowledge of applicable City and department policies, procedures, rules, regulations, and ordinances

Other knowledge as required for successful performance in the Engineering Technician III class

**Skills**

- \*ACTIVE LEARNING - Understand the implications of new information for both current and future problem-solving and decision-making
- \*ACTIVE LISTENING - Give full attention to what other people are saying, take time to understand the points being made, ask questions as appropriate, and not interrupt at inappropriate times
- \*CRITICAL THINKING - Use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- \*MATHEMATICS - Use mathematics to solve problems
- MONITORING - Monitor and assess performance of one's self, other individuals, or organizations to make improvements or take corrective action

Other skills as required for successful performance in the Engineering Technician III class

**Abilities**

- COMPREHEND ORAL INFORMATION - Listen to and understand information and ideas presented through spoken words and sentences

- SPEAK - Communicate information and ideas in speaking so others will understand
  - COMPREHEND WRITTEN INFORMATION - Read and understand information and ideas presented in writing
  - WRITE - Communicate information and ideas in writing so others will understand
  - WORK WITH NUMBERS – Add, subtract, multiply, or divide quickly and correctly
- Other abilities as required for successful performance in the Engineering Technician III class
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All employees of the City of Chicago must demonstrate commitment to and compliance with applicable state and federal laws, and City ordinances and rules; the City's Ethics standards; and other City policies and procedures.

The City of Chicago will consider equivalent foreign degrees, accreditations, and credentials in evaluating qualifications.

\* May be required at entry.

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City of Chicago  
Department of Human Resources  
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