



Code: 6144

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

CLASS TITLE: ENGINEERING TECHNICIAN V

CHARACTERISTICS OF THE CLASS

Under direction, participates in a variety of specialized and/or complex para-professional engineering projects or acts as a working supervisor in an assigned area of responsibility, and performs related duties as required.

This class is the advanced 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

- Performs complex para-professional engineering work at the advanced level or as a working supervisor to support departments in construction activities
- Oversees and/or reviews construction work methods and procedures for a variety of in-house and private construction projects (e.g., highways, pumping stations, viaducts, public way, bridges, traffic installation and management) to ensure compliance with City requirements and engineering specifications and standards and recommends project approvals
- Acts as district or resident engineer on a moderately complex project or as assistant resident engineer on a major construction project dependent on area of assignment
- Reviews electronic and as-built blueprints, sketches, and design plans to identify structures and ensure compliance with City codes, engineering principles and to ensure highest levels of safety (e.g., sewer, alleys and streets, traffic)
- Conducts complex/specialized investigations or inspections of construction sites or structures in response to citizen complaints, work orders, permits and/or certification requests (e.g., street resurfacing, sewer and water main maintenance, concrete and asphalt placements, electrical projects)
- Oversees the review and approval of applications and permit requests for technical accuracy and compliance, and calculates fee (e.g., traffic, driveway, sewer, public way)
- Conducts field surveys for private construction and in-house projects to establish grade elevations and base lines; review structures; and obtain information necessary for preparation of construction plans
- 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
- Studies and reviews major traffic control changes and patterns for incident operations for special events and public way construction activities and provides recommendations to ensure safe traffic control patterns
- Recommends locations for installation of traffic control signals and other traffic regulating devices
- Prepares complex mathematical calculations (e.g., dimensions, photometric, stress, and elevations)

- Utilizes specialized technology to monitor the functioning of water pipes (e.g., aquaphone/audio phone, sound level meter, correlator) and performs fire flow and pitometer testing
- Oversees construction laborers performing manual labor to assist in the inspection and testing of water leaks and sewer mains
- Prepares unit cost estimates and labor and material estimates for construction projects
- Coordinates activities between general contractor, utilities, and other City departments (e.g., construction and installation of street lighting equipment)
- Provides technical information at hearings and legal proceedings, as required
- Supervises and trains subordinate personnel in standard para-professional engineering practices and procedures, 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

- Four 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**

Advanced 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

Moderate knowledge of:

- *specialized engineering principles, methods, practices, and procedures applicable to area of assigned responsibility
- *automated design and computer-aided drafting software
- *interpreting blueprints, design plans and specifications
- *applicable federal, state, and local laws, regulations, and guidelines

Some knowledge of:

- supervisory methods, practices, and procedures

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

Other knowledge as required for successful performance in the Engineering Technician IV 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
- *COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- MANAGEMENT OF PERSONNEL RESOURCES - Motivate, develop, and direct people as they work and identify the best people for the job
- *COORDINATION WITH OTHERS - Adjust actions in relation to others' actions
- INSTRUCTING - Teach others how to do something

- *JUDGEMENT AND DECISION MAKING - Consider the relative costs and benefits of potential actions to choose the most appropriate one

Other skills as required for successful performance in the Engineering Technician IV 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
- REASON MATHEMATICALLY - Choose the right mathematical methods or formulas to solve a problem

Other abilities as required for successful performance in the Engineering Technician IV class

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.

City of Chicago
Department of Human Resources
August, 2018