

## CITY OF ST. LOUIS CLASSIFICATION SPECIFICATION

### CLASSIFICATION

**TITLE:** Mechanical Engineer

**CLASS CODE:** 4271

### **GENERAL DESCRIPTION OF DUTIES:**

Incumbents in this classification perform basic mechanical engineering duties in the areas of construction, maintenance, testing and improvement of city facilities and equipment.

### **DISTINGUISHING CHARACTERISTICS:**

This is an entry-level technical classification in the General Engineering Series – Mechanical Engineering Group job family within the City of St. Louis. Incumbents within this classification perform moderately complex duties with a variety of related tasks. The distinguishing characteristics of this classification within the series include performance of beginning level mechanical engineering work.

Incumbents work under general supervision. While workers require some supervision in most assignments, they are free to develop their own work sequences within established procedures, methods and policies. They are generally in subject to periodic supervisory checks.

### **EXAMPLES OF WORK (Illustrative Only):**

*(The list of duties is intended to be representative of the duties performed in positions within this classification. It does not include all the duties that may be assigned to a position and is not necessarily descriptive of any one position in this class.)*

Designs new mechanical systems for plant facilities and equipment; designs modifications to existing mechanical systems.

Draws plans for design projects; writes specifications for construction and repair contracts; analyzes specifications and makes recommendations to supervisor and maintenance workers.

Conducts field research related to design projects and reports.

Writes reports and requisitions.

Performs maintenance and efficiency tests on mechanical equipment, including pump performance tests, and diagnoses problems.

Communicates orally with managers, technical professionals and vendors.

Performs other duties as assigned.

## **KNOWLEDGE, SKILLS AND ABILITIES:**

### **Data Utilization:**

Requires the ability to perform mid-level data analysis including the ability to audit, deduce, assess, conclude and appraise. Requires discretion in determining and referencing such to established criteria to define consequences and develop alternatives.

### **Human Interaction:**

Requires the ability to provide guidance, assistance and/or interpretation to others, such as co-workers and the public, on how to apply policies, procedures and standards to specific situations.

### **Equipment, Machinery, Tools and Materials Use:**

Requires the ability to operate, calibrate, tune and synchronize, and perform complex rapid adjustment on equipment, machinery and tools such as a personal computer, motor vehicle, CAD, and/or related materials used in performing essential functions.

### **Verbal Aptitude:**

Requires the ability to utilize a variety of reference, descriptive and advisory data and information such as plans and specifications, mechanical diagrams, technical reports, engineering drawings, manuals and handbooks, and non-routine correspondence.

### **Mathematical Aptitude:**

Requires the ability to apply advanced algebra, geometry, trigonometry and integral and differential calculus concepts; ability to perform linear programming.

### **Functional Reasoning:**

Requires the ability to apply principles of logical or synthesis functions involving planning and directing of interrelated activities or multiple departments. Ability to deal with several concrete and abstract variables in working out approaches to major problems.

### **Situational Reasoning:**

Requires the ability to exercise the judgment, decisiveness and creativity required in situations involving the evaluation of information against sensory, judgmental and/or subjective criteria, as opposed to criteria that are clearly measurable or verifiable.

### **Environmental Factors:**

Tasks may risk exposure to adverse environmental conditions, such as dirt, dust, pollen, odors, wetness, humidity, fumes, temperature and noise extremes, machinery, vibrations, electric currents, traffic hazards, toxic/poisonous agents, or pathogenic substances.

**Physical Requirements:**

Requires the ability to lift, carry, push, and pull moderately heavy objects and materials, twenty to fifty pounds, such as a manhole lid or pipe section.

Tasks involve the regular and, at times, sustained performance of moderately physically demanding work, typically involving some combination of climbing and balancing, stooping, kneeling, crouching and crawling in order to gain access to equipment.

**Sensory Requirements:**

Requires the ability to recognize and identify degrees of similarities or differences between characteristics of colors, shapes, sounds, tastes, odors and textures associated with job-related objects, materials and tasks, such as diagnosing problems with equipment.

The City of St. Louis is an Equal Opportunity Employer. In compliance with the Americans with Disabilities Act, the City of St. Louis will provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective and current employees to discuss potential accommodations with the City.

**EDUCATION AND EXPERIENCE STATEMENT:**

Bachelor's degree in Mechanical Engineering with one to two years experience in mechanical engineering design and familiarity with water production equipment and knowledge of HVAC principles, equipment and standards.

**SPECIAL REQUIREMENTS:**

Possession of a valid state driver's license.