CLASS TITLE: SENIOR ENGINEER

CHARACTERISTICS OF THE CLASS

Under general supervision, functions at the senior-level designing, developing, testing, and maintaining high-quality software to meet business and customer needs; and perform related duties as required.

Depending on the role, Engineers work on development initiatives that include: developing features and capabilities for end-users; developing platforms such as data engineering, developer tooling, or machine learning; and configuring and customizing vendor-provided packaged software.

This class is assigned to the City's Engineering Information Technology Job Family which consists of engineers and developers responsible for designing, building, testing, deploying, and supporting IT products and solutions.

ESSENTIAL DUTIES

- Writes code that satisfies customer needs and strives for simplicity, clarity, and testability
- Collaborates with stakeholders to understand functional and non-functional requirements
- Researches and proposes solutions to development and design problems
- Participates in scope of work estimation and forecasting
- Adheres to architecture, design, implementation, and security standards and best practices
- Conducts code reviews or use collaborative programming techniques to promote business outcomes
- Conducts analyses to determine integration needs, and design and plan integrations
- Implements unit and integration tests and conducts functional and performance testing
- Develops reusable software building blocks to enable faster delivery
- Improves performance of existing software by diagnosing and resolving critical issues
- Prepares technical documentation, including software design evaluation plans, test results, and technical manuals
- Adheres to established development practices and processes
- Analyzes and creates new configuration for packages software
- Reviews new releases of packaged software and identifies new features that can be enabled for business needs

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

- Graduation from an accredited college or university with a Bachelor's degree, plus three (3) years of experience as a software engineer, or an equivalent combination of education, training, and experience.

Licensure, Certification, or Other Qualifications

- None

WORKING CONDITIONS

- General office environment

EQUIPMENT

- Standard office equipment (e.g., phone, printer, copier, computers, mobile devices)
- Standard productivity suites (e.g., Microsoft Office Suite, OpenOffice, Google Workspace)

PHYSICAL REQUIREMENTS

- No specific requirements

KNOWLEDGE, SKILLS, ABILITIES, AND OTHER WORK REQUIREMENTS

Knowledge

Moderate knowledge of:

- *coding languages (e.g., JavaScript, C++, Python, Java)
- *development platforms (e.g., AWS, Azure, Salesforce, Pega, Docker, Kubernetes)
- *software development life cycles
- agile development methodologies
- *applicable computer software packages
- *methods, practices, and procedures for analyzing and resolving computer-related problems
- *computer operating systems
- *programming logic, data manipulation, and integrated environments
- *computer systems management
- IT systems development practices, standards, and procedures

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

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
- COMPLEX PROBLEM SOLVING - Identify complex problems and review related information to develop and evaluate options and implement solutions
- TIME MANAGEMENT - Manage one's own time or the time of others
- COORDINATION WITH OTHERS - Adjust actions in relation to others' actions
- JUDGEMENT AND DECISION MAKING - Consider the relative costs and benefits of potential actions to choose the most appropriate one

- SYSTEMS ANALYSIS - Determine how a system should work and how changes in conditions, operations, and the environment will affect outcomes

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

- CONCENTRATE - Concentrate on a task over a period of time without being distracted

- RECOGNIZE PROBLEMS - Tell when something is wrong or is likely to go wrong

- REASON TO SOLVE PROBLEMS - Apply general rules to specific problems to produce answers that make sense

- COME UP WITH IDEAS - Come up with a number of ideas about a topic

- MAKE SENSE OF INFORMATION - Quickly make sense of, combine, and organize information into meaningful patterns

- REACH CONCLUSIONS - Combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events)

Additional Competency Requirements

- COMMUNICATION FOR RESULTS – Writes, speaks and presents effectively. Explains the immediate context of the situation, asks questions with follow-ups and solicits advice prior to taking action. Develops presentations to influence others by using graphics, visuals or slides that display information clearly. Listens and asks questions to understand other people's viewpoints.

- GROWTH MINDSET – Takes ownership of personal growth. Identifies knowledge gaps. Asks questions of subject matter experts and seeks help when needed. Keeps abreast of information, developments and best practices within a field of expertise (e.g., by reading, interacting with others or attending learning events).

- INITIATIVE – Volunteers to undertake tasks that stretch his or her capability. Identifies who can provide support and procures their input. Identifies problems and acts to prevent and solve them.

- OWNERSHIP AND COMMITMENT – Volunteers to undertake tasks that stretch his or her capability. Checks the scope of responsibilities of self and others. Monitors day-to-day performance and takes corrective action when needed to ensure desired performance is achieved. Identifies problems and acts to prevent and solve them. Identifies who can provide support and procures their input.

- DESIGN THINKING – Recognizes patterns and trends from a variety of related sources. Creates an analytical structure and applies it to reconcile data and recognize the need for additional information. Communicates and works with team members to gather feedback on different solutions.

- OUTCOME DRIVEN – Evaluates the effectiveness of current metrics in pursuit of improved performance indicators. Takes appropriate actions to ensure obligations are met. Demonstrates

the ability to challenge existing practices in order to become more effective. Contributes to improve work methods, outcomes and team performance.

- RISK MANAGEMENT – Uses a risk analysis as a way to understand the organization's environment and his or her own work, and adjusts accordingly. Assesses risk and applies risk management strategies to mitigate it.

- TEAMWORK – Actively solicits ideas, opinions and concerns from others to quickly accomplish objectives. Proactively shares information, knowledge and advice with others in own group. Supports others to raise team performance.

- THOROUGHNESS – Demonstrates operational agility. Uses organizational systems that result in multiple critical activities being identified and completed on time. Renegotiates priorities as necessary. Puts systems in place and uses them to monitor and detect errors and problems. Tests and inspects outputs, and applies quality checks prior to work submission.

Other competencies as required for successful performance in the lower-level series.

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
March 2023