CLASS TITLE: PRINCIPAL DATA ANALYST

CHARACTERISTICS OF THE CLASS

Under general supervision, identifies captures, analyzes, and manages data, contributing to better decision-making and planning; and performs related duties as required.

This class is assigned to the City's Analyst Information Technology Job Family which consists of analysts that work with stakeholders to identify and define needs/issues, document requirements, perform analysis, solve problems with fact-based analysis, and provide recommendations.

ESSENTIAL DUTIES

This class is the highest non-supervisory level in the Data Analyst series. This class title requires an increased level of technical skills beyond the senior level. This class is distinguished from the senior-level by the amount of discretion exercised over data analysis projects; positions must possess a considerable level of specialized technical and functional expertise beyond that expected at the senior level and require specialized knowledge, abilities and skills and experience. The principal level also requires an advanced competency level in thoroughness. The principal level has the greatest latitude in determining work methods and assignments; greater authority over assignments and decisions required to complete the work than the lower-level classification; and works on complex database analysis projects.

- Works independently with varying teams to determine how data analysis can support organizational goals
- Gathers data to support recommendations to address problems, with appropriate contingency plans
- Develops recommendations for resolution of problems and reviews recommendations with the team
- Understands and applies information and data analysis requirements
- Turns information into insights to support and enable key decisions and business processes
- Supports information governance in conjunction with Architects and Data Stewards
- Designs, creates, and maintains relational databases and data systems of moderate to high complexity
- Works with open datasets, including populating and extracting data from internal and public open datasets
- Performs data analysis, including conceptualization, modeling, and presentation of data
- Performs a variety of technical tasks related to capturing, managing, and analyzing data
- Cleans and prunes data to discard irrelevant information
- Designs reporting dashboards to translate data into an understandable illustrative format and fulfills ad hoc reporting requests
- Develops procedures for data validation, analysis, and presentation
- Performs initial data exploration (e.g., binning, pivoting, summarizing, and finding correlations)
- Implements statistical models to identify and reveal trends, patterns, and relationships in data to provide guidance to others for decision-making processes
- Actively suggests analytics opportunities and best practices

- Catalogs and enables access to resident and external data sources
- Helps to streamline analytics to go from experimentation into production
- Supports innovative efforts by driving creativity, acting with agility, and thinking outside current boundaries
- May create data visualizations and reports to present to audiences using presentation layer tools

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 with an Associate's degree in Computer Science, Information Systems, Business, or a directly related field plus two (2) years of data analysis work experience, 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

Considerable knowledge of:

- *business operations, systems requirements, and IT processes and technologies
- *data analysis, identifying, analyzing, and interpreting trends or patterns in structured and unstructured complex datasets
- *how data is used within business processes and its impact on desired business process outcomes
- relational databases, SQL databases, data extraction, querying, and scripting
- security, privacy, and quality requirements for critical data

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

Other knowledge as required for successful performance in the Senior Data Analyst 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

- 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.

- ANALYTICAL THINKING – Collects all the relevant information and data needed to address the problem. Organizes, classifies and synthesizes the data into fundamental issues. Breaks the information into manageable components. Identifies the logical outcomes from the analyses of the data collected and identifies the options and solutions for addressing the problems analyzed.

- QUALITY MANAGEMENT – Understands the principles of quality techniques, standards and measurements and uses them in own area of work. Is able to use techniques to evaluate a set of requirements and adjust as needed. Can analyze results and apply meaning to own work.

- INFORMATION SEEKING – Utilizes a variety of information and data sources pertaining to organizational and professional trends. Checks the source for omission and accuracy. Identifies the sources that are appropriate for specific types of information. Checks for bias and omission. Seeks out the appropriate people to approach for guidance either formally or informally depending on the type of issue. Links information in a lateral as well as linear manner. Finds hidden data. Relates and manipulates data from various sources to create a fuller picture. Investigates and uncovers root causes of a problem or issue.

- PROBLEM SOLVING – Issues are often challenging and require analysis to understand and resolve. Applies problem-solving methodologies to diagnose and solve operational and interpersonal problems. Determines the potential causes of the problem and devises testing methodologies for validation. Shows empathy and objectivity toward individuals involved in the issue. Analyzes multiple alternatives, risks and benefits for a range of potential solutions. Recommends resource requirements and collaborates with impacted stakeholders.

- PROCESS ORIENTATION – Shares process steps with others. Helps others understand existing processes, how they work and their overall importance to the organization. Shares process information and makes informal recommendations on how to improve processes and overall job execution.

- DIGITAL DEXTERITY – Creates information models and frameworks. Uses information sources both inside and outside the organization. Uses available technology to share and collaborate.

- THOROUGHNESS – Sets clear expectations. Provides clear assignments and due dates, and follows up to ensure assignments are completed. Evaluates and reviews staff's work for accuracy and completeness. Identifies potential areas of conflicting priorities and challenges to achieving standards. Reviews department's progress against established goals, objectives, service level targets and project milestones. Supports others in achieving deliverables by efficiently allocating resources and providing common organizing systems, techniques and disciplines. Solicits internal and external customer evaluation of performance and devises measures for improvement.

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