

CITY OF LATHROP

INFORMATION TECHNOLOGY ENGINEER I/II/III

*Class specifications are only intended to present a descriptive summary of the range of duties and responsibilities associated with specified positions. Therefore, specifications **may not include all** duties performed by individuals within a classification. In addition, specifications are intended to outline the **minimum** qualifications necessary for entry into the class and do not necessarily convey the qualifications of incumbents within the position.*

DEFINITION:

Under general supervision, assists and performs a full range of entry level to high-level technical, operational, and specialty work in support of the City's Information Technology (IT) Department including analyzing, planning, implementing, maintaining, troubleshooting and enhancing large complex systems or networks consisting of a combination that may include, personal computers, Virtual Desktop Infrastructure (VDI), cell and mobile devices, switches, routers, firewalls, LANS, WANs, point-to-point network radios, physical, virtual and blade servers, Storage Area Network(SAN), Network Attached Storage (NAS), and the physical and logical components that integrate these systems together as an enterprise networking backbone. Incumbents support planning, managing, and coordinating the day-to day network operations, software maintenance activities, and special projects/assignments of the IT Department including security compliance and network maintenance operations, training and technical assistance to users as needed; performs other related duties and responsibilities as assigned.

DISTINGUISHING CHARACTERISTICS:

The **Information Technology Engineer I** is the entry-level class in the Information Technology Engineer series that allows the incumbent to develop journey level knowledge and abilities in support of the City's GIS system. Incumbents in this series have basic to moderate knowledge associated with the development and maintenance of a GIS system. This classification is alternatively staffed with Information Technology Engineer II and incumbents may advance to the higher level after gaining experience and demonstrating a level of proficiency that meets the qualifications of the next higher-level class; and/or successfully managing the GIS system at journey level and demonstrating basic knowledge of managing and programming specialty software.

The **Information Technology Engineer II** is the journey level class responsible for independently performing the full scope of assigned duties, including but not limited to duties assigned under the entry-level class; performs complex systems development, documentation and operational analysis, programming, technical support, troubleshooting, as well as may provide on-the-job training and instructions to subordinate staff as needed, under the direction of the Chief Information Officer, or his or her designee. This classification is distinguished from the next higher classification of Information Technology Engineer III in that the latter has advanced journey level class responsible for performing the full scope of routine and complex assigned duties of the Information Technology Department and related activities. Incumbents may advance to the higher level after gaining experience and demonstrating a level of proficiency that meets the qualifications of the next higher-level class; and/or successfully managing and programming specialty software at advanced journey level and demonstrating basic knowledge of managing and programming security software and demonstrating sound judgement and solutions on securing vulnerabilities and reducing risk of system and/or asset compromises.

The **Information Technology Engineer III** is the advanced journey level class responsible for independently performing the full scope of routine and complex assigned duties; including but not limited to duties assigned under the entry-level and journey level class.

This class is distinguished from the journey level class by the complexity and size of the tasks, projects, or duties assigned; it is also distinguished by the amount of discretion exercised over technical issues, problems and resolutions, and that it possesses a significant level of specialized technical and functional expertise beyond that expected at the journey level. Incumbents at this level require highly specialized knowledge, abilities, skills, and experience and often exercise independent judgement in the performance of their duties; are expected to formulate recommendations consistent with directives, policies, standards, and regulations; work is judged primarily on overall results with great latitude in determining work methods and assignment requirements; serves as the senior technical engineer for large complex systems and networks, with a focus on securing vulnerabilities and reducing risk of system and/or asset compromises. This classification differs from the next higher classification of Chief Information Officer in that the latter provides overall supervision, direction and performs the most complex assignments of the Information Technology Department. Incumbents may provide on-the-job training and instructions to subordinate staff as needed, under the direction of the Chief Information Officer, or designee

SUPERVISION RECEIVED/EXERCISED:

Receives direction and supervision from the Chief Information Officer, or assigned Department Head. Direction and supervision may also come from the City Manager or designee. The incumbents in these positions typically do not exercise supervision over other support staff.

ESSENTIAL FUNCTIONS: *(include but are not limited to the following)*

Entry Level Engineer

- Knowledge of techniques, principals and procedures for planning, scheduling, assigning, evaluating, and monitoring daily activities and operations of the Information Technology Division; including but not limited to GIS software, techniques, procedures, concepts, software and technical operating systems, including analysis, design, development and programming of GIS applications and databases; parcel, tract, right-of-way, and easement complex map design; performs research and interpretation of a variety of maps and other data files from public or private agencies for conversion to the GIS system; prepares accumulated information for input to GIS.
- Plan, implement, document, support and maintain the City's GIS application software, database and all test and production servers; utilizes GIS to produce a variety of high-tech maps and other data for use by City departments, other public and private agencies; assists in software demonstrations, implementations, provides training and support of GIS software for City departments, public and private agencies; performs special studies for City departments utilizing GIS spatial analysis or other tools; resolves maintenance issues and implements corrective measures; monitors operating conditions of GIS equipment and software to ensure efficiency and effectiveness; assists departments in the periodic reassessment of GIS needs and goals; implements solutions as necessary.
- Responds to helpdesk requests for assistance with hardware, software, firmware, encryption, and basic networking and security; repairs or arranges for the repair or replacement of faulty hardware such as; printers, scanners, desktops and other peripherals and software packages; monitors operational performance and troubleshoots system problems, isolates the cause of system failures; performs procedures for preventative maintenance, security updates, backup verification, recovery, and documentation updates of systems, networking and security, configuration of new hardware, software, active directory, email system, phones, ERP security provisioning, changes and de-provisioning; assist with surveillance systems deployments, maintenance and troubleshooting, and video broadcasting, networking, peripherals, and other related equipment setup; performs routine cleaning, repairs, and replacement of computer equipment.

- Assist with server, network equipment deployment and surveillance systems; configuration and deployment of user computer hardware and peripherals including networking, and desk and wireless phones; configures network security settings to access permissions groups for employees and vendor for electronic key systems, vehicle fuel systems, security/access roles, and access permissions.
- Maintains inventory records of existing and newly acquired computer hardware and software; performs monthly inventory of all desktops, tablets and laptops including security patches and virus protection updates of spare systems including encryption for tables and laptops; maintains security, operating systems and firmware patching for desktops, laptops and tablets are performed weekly unless urgent patching is necessary based on CISA (Cybersecurity & Infrastructure Security Agency) Vulnerability Bulletin.
- Assist with maintenance of Citywide HVAC and building security electronic systems and logs; procures quotes for repairs, and or coordinates work order requests.
- Creates and maintains geographic files using GPS, plotters and personal computers; edits computer output for completeness and accuracy and makes necessary corrections and updates.
- Trains users on the use of computer equipment and peripherals, software packages, web-based technologies help desk systems and assists with applications; provides technical support, responds to helpdesk tickets from the users and system notifications of network, security, and servers.

Journey Level Engineer

- May perform some or all duties assigned to the entry-level class.
- Serves as a liaison and project manager between software vendors and internal team; initiates contact and meets with department users; analyzes processes, procedures, and programs to determine the feasibility of conversion to electronic processing; researches, initiates contact and evaluates vendor software for potential use in the City.
- Oversees the installation of new vendor purchased application software; maintains changes and upgrades to the software; monitors software performance; troubleshoots system problems; and interfaces with the vendor when necessary to expedite implementation of needed fixes/changes.
- Designs, documents, and develops applications according to the Software Development Lifecycle (SDLC); extracts, transforms, and loads (ETL) data from business systems for reports or use by other systems.
- Understands and implements service requirements for client-server and web-based information systems; Windows, Windows Server Administration, Microsoft .Net and ASP.Net, SQL Server (database engine, analysis services, integration services) and Windows PowerShell; reporting tools, such as SQL Server Reporting Services (SSRS), Development environments – SQL, .NET, web programming techniques and practices; applications and use Android App development tools and various scripting (Javascript, VB).
- Analyzes, designs, codes, modifies and tests computer programs in accordance with the City's and industry standards; provides documentation as needed for necessary compliance; performs database maintenance duties, including backup, restore, and schema changes, develop queries and reports, and recover from error conditions.

- Responsible to backup all internal developed applications source code to a system with daily backup scheduled to the cloud as well the local backup appliance.
- Reviews and conducts detailed analyses of computer systems and makes recommendations for improved system hardware and software; researches and develops ways to improve the effectiveness and efficiency of business processes.
- Provides consultation for department users with complex program or database considerations and assists with problem solving; takes the lead in identifying resource needs, developing project agreements and project plans for the implementation of new systems; prepares proposals and change orders for existing contracts.
- Develops detailed work breakdown systems and work plans using project management and time tracking tools; Tracks, identifies, and repairs data connectivity problems. Provides regular reports on web page access and web site performance metrics.
- Performs tasks related to the enterprise web presence for the City of Lathrop such as architectural design, administration, support, security, documentation and performance management; investigates and recommends new methods, procedures, tools, and technologies as they apply to content management, search engine placement, and web page development.

Advanced Journey Level Engineer

- May perform some or all duties assigned to the entry-level and journey class.
- Takes lead in establishing networking environment by installing, configuring, testing, and documenting the equipment/network systems according to the design and specifications; monitors network traffic; analyzes server and network activity; maintains performance monitoring systems as well as other software programs including intrusion detection and virus scanning applications and documentation.
- Perform day-to-day networking tasks to ensure network and server reliability, availability, and serviceability within minimal interruption; develops and maintains documentation of area network infrastructure and operations of local and wide area networks with the assistance of the lower level IT Engineers.
- Review of daily system backups; troubleshoot if necessary of any issues, monthly verification of all servers' backups and monthly backup restores testing; backup configuration of all networking equipment, switches, radios, firewall, routers, and other network equipment.
- Assists department personnel on networking and security troubleshooting; initiates and provides applicable training; develops and administers, or provides advice, evaluation, and oversight for, information security user training and awareness programs.
- Maintains inventory records of existing and newly acquired server hardware, software license, telecommunications circuits, and network equipment.
- Reviews, maintains, and implements network group policies for Active Directory.
- Ensures monthly security and firmware patching for network equipment, server hardware, and operating systems, unless urgent patching is necessary based on CISA (Cybersecurity & Infrastructure Security Agency) Vulnerability Bulletin recommendations.

- Plans, coordinates, configures, implements, administers and maintains security systems, including administration of firewall, switches, routers, wireless technologies, physical security for all sites with network access and security systems; configures network security settings for employees, vendor and processes for incoming and outgoing internet traffic as well internal data flows.
- Perform network technology upgrades or expansion, including installation of hardware, software, and integration testing, security, as well as coordinating these activities without impacting functions of existing systems and networks; plans, tests, and implements programs to ensure network system redundancy; performs backups of all network equipment configuration; and plans for and implements disaster recovery site test every six months or as required.
- Develop and maintain documentation of network topology, and troubleshooting of networking hardware and software; Plans, coordinates of installation, monitoring, and trouble-shooting of surveillance and LPR networks.
- Knowledge of and responsible for compliance of Federal, State and City laws, codes, ordinances, policies and procedures relevant to information technology; reviews and maintains FCC license for radio infrastructure as well as Wide Area Network systems.
- Responsible for PCI compliance requirements; stays abreast of newest technology for payment card industry security information and provides tools to help the organization maintain a secure electronic payment environment.
- Responsible to configure, train, deploy, maintain and trouble-shooting of two factor authentication and VPN software.
- Designs, implements, maintains and operates information system security controls and countermeasures; assists as the City's project lead in the design and oversees installation of fiber and wiring for networking and telecommunications in new building or remodels.
- Analyzes and recommends security controls and procedures in business processes related to use of information systems and assets, and monitors for compliance.
- Monitors information systems for security incidents and vulnerabilities; develops monitoring and visibility capabilities; reports on incidents, vulnerabilities, and trends; examines systems, networking logs daily, and maintains computing environment free of malware and security threats.
- Responds to information system security incidents, including investigation of, countermeasures to, and recovery from computer-based attacks, unauthorized access, and policy breaches; interacts and coordinates with third-party incident responders, including law enforcement; monitors homeland security notifications for security risks/threats and implementation of recommendations.
- Administers authentication and access controls, including provisioning, changes, and de-provisioning of user and system accounts, security/access roles, and access permissions.
- Analyzes trends, news and changes in threat and compliance environment with respect to organizational risk; advises organization management and develops and executes plans for compliance and mitigation of risk; performs risk and compliance self-assessments, and engages and coordinates third-party risk and compliance assessments.

- Analyzes and develops information security governance, including organizational policies, procedures, standards, baselines, and guidelines with respect to information security and use and operation of information systems.
- Maintains inventory records of existing and newly acquired networking hardware and software, telecommunications circuits and carriers, servers, security encryption keys, SSL certificates, access points, Network radios, communications, firmware versions and network maps. Perform audits every six months to validate inventory.

PHYSICAL, MENTAL, AND ENVIRONMENTAL WORKING CONDITIONS:

Position requires prolonged sitting, standing, walking, pushing, pulling, reaching, twisting, turning, kneeling, bending, squatting, and stooping and/or crawling in order to install or repair computer or printer cables and hand/eye coordination and manual dexterity for semi-skilled movements, such as taking apart casings, installing parts, reconnecting computers and data entry. May involve extensive Video Display Terminal (VDT) exposure, in the performance of daily activities. The position also requires grasping, repetitive hand movement, and fine coordination in preparing statistical reports and data using a computer keyboard. Additionally, the position requires near and far vision in written reports and work related documents. Acute hearing is required when providing phone and personal service. The employee is occasionally exposed to fumes or airborne particles potentially found in the maintenance or installation of equipment. The employee may occasionally work with use of a vehicle. The noise level in the work environment is usually moderate, but may increase around the use of heavy computer hardware, servers, and sound systems.

QUALIFICATIONS: *(The following are minimal qualifications necessary for entry into the classification.)*

Education and/or Experience:

Any combination of education and experience that has provided the knowledge, skills, and ability necessary for an Information Technology Engineer I/II/III. A typical way of obtaining the required qualifications is to possess the equivalent of:

Information Technology Engineer I

Three (3) years of high-level technical experience in the installation, repair and maintenance of computer hardware, software systems, LAN (local area networks), TCPIP protocols, web site maintenance (HTML), Microsoft Operating System-Desktop and Server; GIS (ESRI) maintenance, updates and implementation; possession of an Associates of Arts Degree from an accredited college or university in pre-engineering, computer science, computer applications and systems, information systems management, or equivalent field experience.

License/Certificate:

Possession of, or ability to obtain, a valid Class C California driver's license.
CompTIA A+ Certification – Preferred

Information Technology Engineer II

Three (3) years of experience equivalent to the City of Lathrop Information Technology Engineer I; or four (4) years as a journey level in high-level technical experience with increasingly responsible experience as a project lead in programming, possession of an Associates of Arts Degree from an accredited college or university in pre-engineering, computer science, computer applications and systems, information systems management, or equivalent field experience.

License/Certificate:

Possession of, or ability to obtain, a valid Class C California driver's license.

MCSA (Microsoft Certified Solution Developer) - preferred

MCSA (Microsoft Certified Solutions Associate) - preferred

Information Technology Engineer III

Four (4) years of directly related experience equivalent to the City of Lathrop Information Technology Engineer II; or five (5) years of experience as advanced journey level in high-level technical experience with increasingly responsible experience as a project lead or lead technical architect and systems integrator for large complex systems or networks, with a focus on securing vulnerabilities and reducing risk of system and/or asset compromises; possession of an Associates of Arts Degree from an accredited college or university in pre-engineering, computer science, computer applications and systems, information systems management, or equivalent field experience. Bachelor's Degree and responsible supervisory experience is highly desirable.

License/Certificate:

Possession of, or ability to obtain, a valid Class C California driver's license.

CCNP or higher (CCIE and/or CISSP)

CompTIA networking certifications

KNOWLEDGE/ABILITIES/SKILLS *(The following are a representative sample of the KAS's necessary to perform essential duties of the position.)*

Knowledge of:

Current principles, technology methods, and implementation techniques of local-area and wide-area voice and data networking, network security, including use of high-speed digital transmission facilities; principles, methods, practices, and techniques of managing telecommunications and information system; current technology in the areas of multi-user computer server hardware, software, and support functions; current management practices; principles of supervision, training, and employee development; applicable federal, state, and local laws, regulations, and reporting requirements, including related safety regulations; principles and practices of project management, administrative analysis, and report preparation; techniques for dealing with the users, representatives of other agencies, organizations, and the public, and resolving problems tactfully and effectively; basic principles of mathematics; methods and techniques of scheduling work assignments; standard office procedures, practices, and equipment; modern office practices, methods, and equipment, including a computer and applicable software; methods and techniques for record keeping and report preparation and writing; proper English, spelling, and grammar; occupational hazards and standard safety practices.

Ability to:

Develop and implement improvements to systems, organizations, and operations; research and analyze current and future network, systems and telecommunication requirements; provide high-level technical advice and consultation to ensure efficient data communications, telecommunications, and computer utilizations; stay current with new technological developments; analyze data and develop logical solutions to problems; review and approve appropriate revisions to processes and procedures; establish priorities; respond to deadlines and time restrictions; acquire a thorough knowledge of applicable policies; learn principles and operational characteristics, services; create and prepare a variety of written procedures and policies; establish and maintain cooperative relationships with those contacted in the course of the work, such as with employees, labor unions, officials, contractors, and the public; maintain confidentiality regarding sensitive information; analyze a complex issue and develop and implement an appropriate response; follow written and oral directions; observe safety principles and work in a safe manner; communicate clearly and concisely, both orally and in writing; establish and maintain effective working relationships; respond to after hours call-outs as assigned.

Skill to:

Operate an office computer, a variety office, and financial software applications; operate various equipment, communication, and Cisco network systems; Microsoft Server Operating Systems network systems; operate tools needed for the repair of information system hardware. Communicate clearly verbally and in writing.

HISTORICAL DATA

Adopted: September 14, 2020 by Resolution 20-_____

FLSA Status: Exempt

Bargaining Unit: LMCEA