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| **INFRASTRUCTURE SYSTEMS ENGINEER** |
| **Reports to:**  | Manager, Infrastructure Systems and Application Development |
| **Dept:** | Academic Information Services | **Range:** | 40 |
| **FLSA:** | Exempt | **EEO:** | Professional/Non-Faculty |

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed by individual positions.*

### BASIC FUNCTION:

Under general direction, serve as a technical architect, engineer, designer and administrator for the college’s core infrastructure services and operations including design, testing, deployment, integration, monitor­ing, management and security; ensure the stability, integrity and efficiency of the information systems infrastructure that supports the district’s information technology (IT) environment; and perform related duties as assigned.

### ESSENTIAL DUTIES & RESPONSIBILITIES:

*The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to this class.*

1. Architect, engineer, design, implement and manage the district’s infrastructure and systems encompassing virtual, physical and cloud computing, storage, networks and applications in highly available multi-site data centers; ensure secure, highly reliable delivery of services on a 24/7/365 basis to meet business requirements; ensure the core infrastructure is robust, scalable and efficient in supporting district applications and support services and is in accordance with industry standards and best practices.
2. Participate in the planning, design, implementation and support of a variety of complex application and infrastructure-related projects and upgrades in such areas as server hard­ware and storage systems, server virtualization, cloud distributed applications, Active Directory Domain Services, email services and disaster-recovery solutions.
3. Identify the impact of changes in systems and applications on enterprise infrastructure opera­tions; assess and resolve complex systems engineering and administration issues; deter­mine potential solutions to resolve and prevent service interruptions; implement and follow policies and procedures for change and incident management; document technical problems, resolutions and processes.
4. Anticipate, identify, research, troubleshoot and resolve complex and often ambiguous system hardware, software and systems integration problems; install and test operating system patches, releases, upgrades and fixes; engage outside support when needed.
5. Architect, install and maintain PeopleSoft server systems; maintain database, application and Web servers; perform Linux, Windows and other server administrator functions.
6. Engineer, design, deploy and monitor network and system security systems and procedures and disaster recovery solutions; define, identify and mitigate potential vulnerabilities; maintain various firewall/access lists; analyze and modify or install new security rules, policies and protocols; monitor and maintain replications and backup systems to meet industry standards.
7. Assess system capacity issues, evaluate software and other alternatives and recommend system upgrades or replacements.
8. Conduct research on emerging products, services, protocols and standards in support of systems engineering and management; test and evaluate new technologies and provide recommendations for implementing new IT solutions and/or services.
9. Participate in the development and implementation of district-wide technical strategies and initiatives for the data center environment, including adoption of new tools and procedures; participate in strategic planning for Network and Data Center functions.
10. Implement and monitor enterprise disaster-recovery standards, including audit and legal requirements, risk analysis, recovery strategies, and the setup and maintenance of fault-tolerant hardware and data backup systems.
11. Provide on-call support for system hardware and computing infrastructure as assigned.

### OTHER DUTIES:

1. Serve as Tier III escalation point for varied infrastructure and application problems; provide technical guidance to staff and others to resolve issues; develop and maintain technical documentation.
2. Perform computer forensics responsibilities based on subpoenas, requests for public records and administration requests; extract and retrieve data from various systems as directed; provide copies for legal requests.
3. Maintain up-to-date technical knowledge by attending educational workshops, reviewing professional publications, establishing personal networks and participating in professional associations.
4. Participate in/on a variety of committees, meetings, trainings, seminars and/or other related groups in order to receive and/or convey information.
5. Perform related duties as assigned.

### KNOWLEDGE AND ABILITIES:

### KNOWLEDGE OF:

1. Development of infrastructure strategy and IT operational policies and standards.
2. Advanced operating system architectures, characteristics, components and commands applicable to enterprise information systems and multiple platform operating systems.
3. Enterprise physical and virtual data center infrastructure.
4. Data storage technology principles, practices, hardware, components and software including cloud and virtual technologies.
5. Network architectures and theory and principles of network design and integration and principles, practices, tools and techniques of network administration and maintenance.
6. Security technologies such as firewalls, intrusion detection and intrusion prevention.
7. Typical enterprise operating systems such as UNIX, Linux and Windows,
8. Enterprise directory services.
9. Typical enterprise business applications used in California community colleges.
10. Principles and practices of data communications design.
11. Principles and concepts of establishing and documenting baseline systems performance.
12. Principles and practices of disaster-recovery design and planning, including audit and legal requirements, risk analysis and recovery strategies.
13. Methods used in the installation, configuration and trouble-shooting of software applications and peripheral equipment; applicable scripting and programming languages.
14. Workflow applications.
15. Principles and practices of business communication.
16. Principles, practices, methods and techniques of project management as they apply to information technology projects.
17. Pertinent federal, state and local codes, laws and regulations.
18. College organization, functions, rules, policies and procedures applicable to assigned areas of responsibility.
19. Safety policies and safe work practices applicable to the work.
20. Written and oral communication skills including correct English usage, grammar, spell­ing, punctuation and vocabulary.

### ABILITY TO:

1. Perform complex systems administration in a multi-platform and operating systems environment, independently and with a high degree of understanding of interoperating and integration issues.
2. Research, comprehend and develop conceptual frameworks to apply state-of-the-art technologies to the design and management of the district’s infrastructure systems.
3. Analyze and interpret data and statistics to identify trends, change impact, perform, usage and growth potential.
4. Understand and define internal business processes relevant to assigned area of responsi­bility and gather project information from external business and teams.
5. Establish and maintain project schedules and balance responsibilities for multiple activities to ensure timely, high quality results.
6. Organize, set priorities and take initiative on multiple assignments within area of responsi­bility.
7. Research, analyze and apply difficult concepts in complex technical literature relevant to assigned area of responsibility.
8. Perform advances systems troubleshooting and tuning to resolve complex systems management, communication and interoperating problems.
9. Prepare clear, concise and accurate proposals, reports, documentation and other written materials.
10. Exercise sound independent judgment within general policy guidelines.
11. Interpret and apply applicable federal, state and local laws, codes, regulations and adminis­trative policies and procedures.
12. Communicate effectively, both orally and in writing.
13. Demonstrate sensitivity to and understanding of diverse academic, socioeconomic, cultural, ethnic and disability issues.
14. Establish and maintain effective working relationships with all those encountered in the course of work.

### EDUCATION AND EXPERIENCE:

Graduation from an accredited four-year college or university with major coursework in computer science, information systems or a related field, and at least five years of progressively responsible experience in the design, development, implementation, troubleshooting and main­tenance of enterprise infrastructure systems and technologies; or an equivalent combin­ation of training and experience.

### LICENSES AND OTHER REQUIREMENTS:

A valid California driver’s license and the ability to maintain insurability under the district’s vehicle insurance program.

**WORK DIRECTION, LEAD AND SUPERVISORY RESPONSIBILITIES:**

Project lead responsibilities.

**CONTACTS:**

District administrators, faculty, staff, students, other college and community organizations, vendors, contractors and the general public.

**PHYSICAL EFFORT:**

*The physical efforts described here are representative of those that must be met by employees to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.*

Moderate physical labor including frequent standing, walking, bending or stooping; occasional to frequent lifting, carrying, pulling and/or pushing of objects weighing up to 50 pounds; ability to work at a computer including repetitive use of a computer keyboard, mouse or other control devices; ability to travel and/or drive to a variety of locations on and off campus as needed to conduct district business.

**EMOTIONAL EFFORT:**

Ability to develop and maintain effective working relationships involving appropriate interactions and communications personally, by phone and in writing with a variety of individuals and/or groups of individuals from diverse backgrounds on a regular, ongoing basis; ability to concen­trate on detailed tasks for extended periods and/or intermittently while attending to other responsibilities; ability to work effectively under pressure on a variety of tasks concurrently while meeting established deadlines and changing priorities.

**WORKING CONDITIONS:**

Primarily indoor office and data center environments; subject to occa­sionally working outside during inclement weather, in confined and/or awkwardly configured, poorly-lighted work areas, around high voltage and electrical panels. Exposure to computer operation noise; subject to frequent interruptions by individuals in person or by telephone, intermittent exposure to indivi­duals acting in a disagreeable fashion. May work at any college location during day and/or evening hours with occasional holidays and/or weekends on an as-needed basis. Occasional local travel may be requested.