

## **SYSTEMS AND PROGRAMMING ADMINISTRATOR**

### **DEFINITION**

Under general direction, leads and performs complex professional information technology duties related to system programming, development, testing, system administration, database administration and data warehousing; performs advanced planning, coordination, design, enhancement, and maintenance of District applications and/or systems, including enterprise databases and servers; plans, develops and ensures application and system functionality, integrity and security; may serve as a lead worker over subordinate professional and technical staff; and performs related work as assigned.

### **DISTINGUISHING CHARACTERISTICS**

This is the advanced level class in the professional Systems and Programming Series within the Yosemite Community College District (YCCD). Incumbents in this class perform complex professional analytical database, system, and server administration duties and may also perform complex programming duties. Incumbents typically serve as lead workers in their assigned unit and utilize the most advanced professional knowledge of information technology to make decisions and complete assignments.

This class may be distinguished from the lower-level class of Systems and Programming Analyst because incumbents in that class perform journey-level professional analytical duties and not have full administrative responsibility for database, server and/or system operations.

### **SUPERVISION RECEIVED AND EXERCISED**

Incumbents in this class work under the general direction of a manager or senior manager, working from broad policies and towards general objectives. Incumbents refer specific matters to a supervisor only when interpretation or clarification of organizational policies is necessary.

An incumbent in this class does not directly supervise other full-time employees, but may serve as a lead worker by assigning, directing and/or monitoring the work of subordinate full time professional and other employees on a regular basis.

### **ESSENTIAL DUTIES**

- Performs advanced professional duties related to information technology functions such as applications programming and database, server and/or systems maintenance/administration; supports, maintains and administers complex District applications, systems, and technology functions across multiple programs and technologies.
- Maintains and administers complex and technical functions of assigned systems; oversees and performs advanced installations, patching, and failure detection/analysis; analyzes systems for response times, problem prevention, performance and resource utilization; coordinates and implements actions to overcome result deviations.
- Monitors assigned complex systems for failure detection/analysis; systems for response times, problem prevention, performance and resource utilization; system access. Creates complex scripts to assist with monitoring systems, diagnostics, problem correction and automating routine tasks and process automation.
- Configures systems for high availability including strategies for back-up and recovery, failover, load balancing and redundancy.

- As an active participant in Configuration Management, records and manages system configuration for assigned systems.
- As an active participant in Change Management, creates detailed change requests as necessary for application and system changes; as a member of a team reviews and approves Change Requests; executes approved Change Requests as assigned.
- As an active participant in Lifecycle Management, reviews and recommends changes to existing application, reports and systems.
- Coordinates and leads the design and development of new systems and applications, including full cycle programming activities; meets with clients to establish requirements; determines methods of meeting client needs with appropriate software and/or hardware technology.
- Develops program code utilizing secure programming methodologies and develops accessible user interfaces in compliance with local, state and federal requirements.
- Utilizes version control systems to record and maintain program modifications. Submit code to peers for review and conducts peer code review for other team members.
- Creates and modifies enterprise database and system user accounts; resolves user account problems; monitors applications access; defines group policy parameters; assigns security levels; monitors and analyzes security reports; applies patches and fixes; ensures appropriate controls and audit logs are in place for assigned systems in accordance with local, state and federal requirements.
- Oversees and performs system and database backup and disaster recovery processes.
- Plans and implements system security policies for assigned databases, servers and systems in accordance with local, state, and federal requirements.
- Administers enterprise and other system performance, security, data security and data recovery processes in accordance with local, state and federal requirements; ensures proper integration of assigned systems to other District systems.
- Designs and administers complex data storage and warehousing processes.
- Oversees complex system development and enhancement projects, including the design and development of new systems and/or applications; conducts needs and growth analyses and capacity planning; meets with clients to establish requirements; determines project goals and objectives; identifies staffing, materials and equipment needs; estimates costs and timeframes; proposes and recommends hardware and software needed to support systems; tests and resolves program and system issues; creates installation packages and deploys new hardware and software solutions; oversees the provision of maintenance support after system implementation.
- Provides leadership to project support staff; confers with other personnel to ensure adherence to project objectives and system intent, and maintains communication with all project principals.
- Coordinates complex activities related to the evaluation, selection, and acquisition of new computer hardware and software solutions; confers with vendors and/or other agencies as needed; researches options and analyzes costs/benefits of implementation; analyzes integration issues; determines communications requirements for new equipment installation; prepares reports and recommendations for management regarding the purchase of microcomputers, software and peripherals.
- Leads and coordinates the large-scale implementation of new processes, upgrades and equipment rollouts; plans and implements District-wide systems upgrade strategies and procedures;

troubleshoots and resolves conversion and implementation problems; ensures that system status is communicated to the user community.

- Creates and writes network and server documentation from hardware and network schematics to applications flowcharts; writes, debugs and documents enterprise system scripts; schedules system batch jobs.
- Extracts application data and prepares complex reports; constructs complex queries; assists users in identifying data reporting needs.
- Plans, develops and prepares technical standards, operational procedures and system performance objectives.
- Design database structures and implement them in databases in accordance to project requirements and stakeholder needs.
- Participates in activities surrounding data classification, data retention, and data governance
- Serves as a lead worker by assigning, directing and monitoring the work of subordinate professional and technical staff on a regular, project and assignment basis.
- May lead and coordinate the daily operations at an assigned location; may monitor and oversee the daily use of resources such as power distribution, UPS, HVAC, fire suppression systems, and network connectivity.
- Attends meetings; serves on committees and task forces; independently responds to various inquiries and correspondence; prepares information and data requested for administrative review; maintains information system documentation; prepares reports, files, correspondence and other documents.
- Conduct research on emerging products, services, protocols, and standards in support of systems software procurement, and development efforts, and IT administration efforts.
- Performs other related duties as assigned.

### **MINIMUM QUALIFICATIONS**

*To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The knowledge and ability requirements are representative of essential duties. Reasonable accommodation may be made to enable individuals with disabilities to perform the essential functions of the position.*

#### **Education and Experience:**

*Any combination of education, experience and/or training that would likely provide the above-required knowledge, skills and abilities is qualifying. Typical background patterns that would provide the knowledge, skills and abilities are:*

#### Pattern I

- Experience: Three years equivalent to a Systems and Programming Analyst at YCCD.

#### OR Pattern I

- Education: Possession of a bachelor's degree from an accredited college or university, with major course work in computer science or a closely related field.
- Experience: Four years performing professional information technology duties that included system programming, development, testing, implementation, documentation and maintenance.

**Special Requirements:**

- None

**Knowledge of:**

- Complex data management techniques.
- Data security and disaster recovery systems and procedures.
- Change Management procedures
- Configuration Management procedures
- IT Service Management procedures
- Principles and theory of professional business analysis practices, procedures and strategies
- Principles and theory of professional project management practices, procedures and strategies.
- Hardware installation and upgrades.
- A range of network systems, protocols, and applications.
- Server LAN administration in a secure environment.
- Systems security protocol, policies, and procedures.
- A broad range of relevant multi-user computer systems, applications, and/or equipment including Ellucian Colleague Student/Administrative systems.
- Systems growth analysis and capacity planning processes and techniques.
- Cost analysis and budgeting procedures.
- A variety of programming languages.
- Computer site licensure regulations and requirements.
- Standard backup infrastructures.
- Computer operating systems, networking and scripting languages.
- The appropriate uses of computer technology, how to use and adapt older equipment.
- Current technological developments/trends in area of expertise.

**Ability to:**

- Plan, create, maintain, and manage complex computer systems.
- Identify, research and problem-solve in a timely manner.
- Diagnose computer problems and coordinate hardware and/or software solutions, including vendor communications.
- Communicate technical information to non-technical personnel.
- Plan, implement, test, and troubleshoot system software.
- Prepare meeting agendas, attend meetings, and record and transcribe minutes.
- Lead assigned staff including prioritizing and scheduling work assignments.
- Interact professionally with a diverse group of clients and staff.
- Teach and train about network use and software skills.
- Communicate effectively, both orally and in writing.
- Establish and maintain a cooperative working relationship with staff and department.

**Licenses and Certificates:**

- Depending upon assignment, a valid license to drive in California may be required.

**Physical and Mental Standards:**

- **Mobility:** ability to sit for long periods, move about an office, stand occasionally, reach above and below desk level.
- **Dexterity:** fine manipulation sufficient to operate a computer keyboard, handle individual papers, write and take notes.
- **Lifting:** frequent lifting of papers, files, equipment and material weighing up to 25 pounds; occasional lifting of items up to 50 pounds.
- **Visual Requirements:** close vision sufficient to read files, documents, and computer screens and do close-up work; ability to adjust focus frequently.
- **Hearing/Talking:** ability to hear normal speech, speak and hear on the telephone, and speak in person.
- **Emotional/Psychological Factors:** ability to make decisions and concentrate; frequent contact with others including some public contact; frequent deadlines and time-limited assignments.

**TYPICAL WORKING CONDITIONS**

- Work is generally performed in an indoor office environment that includes frequent exposure to computer screens.

*Class Adopted: 03/01/09*  
*Class Amended: 07/01/23*