SYSTEMS ADMINISTRATOR

DEFINITION

Under general direction of the Manager of Technology Services, performs systems design and modification, installations, implementation, programming, configuration, hardware and software selection and modification. These tasks will range from routine to complex in nature in support of College administrative and instructional functions for all college computing systems including, network servers, Internet services and personal computer users; performs related duties as required or assigned.

CLASS CHARACTERISTICS

This is a professional level class which performs varied internetwork services and server analysis, programming, installation, configuration, implementation and design for the college. This class works with distributed computer systems including campus and Internet clients, college network resources, web service providers, instructional and administrative computing systems. Hardware, network operating systems and programming languages will vary depending upon current needs and technologies. This position is characterized by the necessity of systems design, analysis, assessment, systems programming, user interface development and extensive documentation and training.

EXAMPLES OF DUTIES (Illustrative Only)

- Designs, implements and maintains Internet and network services (E)
- Gathers and analyzes information regarding the college network services requirements and develops or modifies systems to support college needs (E)
- Installs, configures, tests, implements, upgrades, repairs, troubleshoots and maintains systems including servers, workstations and associated equipment (E)
- Designs and implements appropriate systems access restrictions (E)
- Provides guidance to campus user community regarding relevant laws and policies (e.g. ADA compliance, copyrights, software licensing) (E)
- Works closely with vendors and tech support; performs timely upgrades and updates to commercial and open-source software (E)
- Acts as second tier support to helpdesk and technicians; may serve as a front-line interface to users; serves as backup to network administrators (E)
- Provides technical lead to computer maintenance technicians, student assistants and users (E)
- Works closely with network administrators and other system administrators (E)
- Works closely with Teaching and Learning Center personnel in the development and support of Web based instructional programs (E)
- Develops system, hardware and cost requirements and proposed time frames (E)
- Simulates hardware and software problems, tests and evaluates alternative solutions, and recommends and implements appropriate operating systems, software applications and hardware (E)
- Contributes to centralizing authentication using AD and RADIUS, LDAP and other relevant protocols and applicable procedures (E)
- Troubleshoots hardware and software problems as needed (E)
- Conducts feasibility studies (E)
- Conducts software training in an individual or organized classroom setting for College staff to ensure effective use of internetwork services (E)
- Tracks and evaluates adopted systems and programs (E)
EXAMPLES OF DUTIES (continued)

- Monitors systems performance and recommends changes, confers with staff regarding department needs (E)
- May direct the work of others on a project basis
- Performs regular backups and data restores as needed (E)
- Maintains records and documents events, procedures, and system configuration (E)
- Writes user procedures and instructions and assists departments and staff in implementing new or upgraded programs and applications (E)
- Assists in tracking service contract and subscription renewals (E)
- Maintains current knowledge of new technologies and new computer applications (E)
- Recommends hardware and software applications for assigned area of expertise (E)
- Assists in planning for the future of the campus network and Internet services (E)
- Performs related duties as required or assigned

The Systems Administrator may be assigned one or more specialized responsibilities as represented by, but not limited to, the following:

**LAN Applications:**
- Designs, implements and maintains enterprise backup, recovery and business continuity processes (E)
- Manages server-based applications, including non-enterprise databases; directs and coordinates management of application client software (E)
- Designs, implements and maintains network user accounts structure for staff (E)
- Administers enterprise anti-virus solution (E)
- Manages network printing (E)
- Configures and administers college SAN (E)
- Administers and maintains VMware infrastructure (E)

**WEB Applications:**
- Coordinates back-end systems that drive college websites (E)
- Installs, configures and maintains http servers, web applications servers, and web databases (E)
- Researches evolving web technologies and analyzes benefits to the college (E)
- Coordinates web services used by content providers and consumers (E)
- Designs web application interfaces (E)
- Presents dynamic web content using APIs (E)
- Configures and maintains content management systems (E)

**Microsoft Servers:**
- Designs and maintains Active Directory forest and domains (E)
- Administers AD group policies (E)
- Plans and implements AD integration of VoIP servers and user rights (E)

**NIX Servers:**
- Ensures secure operation of http, PHP, JavaScript, etc. (E)
- Advanced filesystem concepts (inode, clustering, logical volumes) (E)

(E) = designates an essential function
QUALIFICATIONS

Knowledge of:

- Fundamental networking/distributed computing environment concepts; use of nslookup or dig to check information in the DNS; DHCP functionality; basic routing and switching concepts; TCP/UDP ports and access control lists
- Standard computer programming principles, and best practices
- Programming and scripting languages, which may include shell scripting, PERL, VisualBasic, Python, PHP, JavaScript, ActionScript
- Server event and performance monitoring software and procedures
- Enterprise-class virtual servers
- Enterprise storage techniques including SAN
- DNS Server, email and listserve functionality
- Web server implementation and maintenance; HTML, CGI, CSS, etc.
- Operating principles and characteristics of Internet services, client/server environments, workstation operating systems, and end-user computer hardware utilized by the College
- Specific operating system internals; paging and swapping, inter-process communication, devices and device drivers
- Network operating systems, protocols, end-user operating systems, related applications and utilities
- Systems analysis and design procedures
- Techniques for instructing others in hardware and software usage
- Effective job planning, prioritizing and scheduling techniques
- Familiarity with software applications currently in common use at the college
- Server room facilities management; rack systems, UPS, environmental monitoring

Skill in and ability to:

- Analyze server and networking systems problems and develop new or modified solutions to meet changing conditions
- Analyze network and Internet server system requirements and select appropriate hardware and software solutions
- Develop and document logical procedures and develop tests to server configuration and efficiency
- Troubleshoot hardware and software problems and debug systems as required
- Prepare clear and concise documentation, user procedures, reports of work performed, and other written materials
- Recommend policies on system use and services (within broader guidelines)
- Independent problem-solving, self-direction
- Translate college and department needs into operational solutions
- Instruct staff in the operation of new or revised servicer applications including explaining complex concepts to non-technical users
- Exercise sound judgment and establish appropriate priorities within established guidelines
- Read, analyze and interpret technical manuals, procedures and instructions
- Define problem areas, collect and evaluate data, and make appropriate recommendations
- Make mathematical calculations rapidly and accurately
- Communicate effectively, both orally and in writing; utilize appropriate phone and email etiquette
- Attend to and analyze detailed information
Skill in and ability to: (continued)

- Exercise discretion and safeguard the confidentiality of information
- Understand and follow oral and written directions with minimal supervision
- Effectively organize and participate in meetings
- Establish and maintain effective working relationships with those contacted in the course of work
- Proficient with most operating system commands/utilities including user management, file systems rights and backup techniques
- Trace, identify, and resolve hardware and software malfunctions
- Perform complex analyses for local/wide area networking systems
- Analyze system generated statistics and make recommendations for configuration and resource allocation
- Operate an automobile or comparable vehicle for transportation to work sites

Other requirements:

- Must possess and maintain a valid California driver’s license and a safe driving record in order to drive a vehicle, including college carts
- Must be willing to work days, evenings, and weekends at various college locations

Education and experience:

A typical way of gaining the knowledge and skills outlined above is:

Equivalent to two years of college level course work with major course work in information technology, digital media, computer science, mathematics, or a closely related field AND three years of increasingly responsible experience in workstation and server administration, design, implementation, configuration, monitoring, installation, troubleshooting and/or website design and management.

Please note: Additional experience as outlined above may be substituted for the education on a year-for-year basis and/or additional education may be substituted for the experience on a year-for-year basis. Additional similar technical experience may be substituted for systems administrator experience on a year-for-year basis.