Title: **Systems Engineer**

Grade: **MM5b**  
Class Code: **0043**  
FLSA: **Exempt**  
Status: **Classified**

Department(s): **Aviation, Central Services, & Water**

Division(s): **Various**

Reports To: **Varies**

Created: **6/27/1996**  
Revised: **3/8/06; 9/1/06; 8/1/07; 7/1/08; 2/12/10**

Dimensions:  
Indeterminate

**Purpose:**

The Systems Engineer’s role is to ensure the stability, integrity, and efficient operation of the in-house information systems that support core organizational functions. This is achieved by monitoring, maintaining, supporting and optimizing all networked software and associated operating systems. The Systems Engineer will apply proven communication, analytical, and problem-solving skills to help identify, communicate, and resolve issues in order to maximize the benefit of IT systems investments.

The systems engineer is a multi-faceted infrastructure support position that can be assigned the duties of: server administrator, database administrator, information security administrator, disaster recovery administrator and network administrator or a combination of these duties.

**Key Responsibilities:**

The Systems Engineer position is a multi-incumbent classification assigned to several City divisions. The individual daily duties, assignments and operating systems will vary dependent upon assigned division and role. Any incumbent may specialize in one area but is expected to be able to move interchangeably between roles as the needs of the assigned division require.

Incumbents in all departments must be available for call twenty-four hours a day, seven days a week.

The Systems Engineer receives administrative direction from the Information Technology Manager in the Department of Central Services and from the Water Information Systems Supervisor in the Department of Water. In the Department of Aviation, the Systems Engineer receives his/her direction from the Finance/Administration Manager.

The incumbent is responsible for planning and carrying out broadly defined missions or functions. Incumbent must support the values and visions of the Aviation Department, Central Services Department or Water Department as appropriate. The Systems Engineer has responsibility for operating software systems design and development of specifications, software planning and evaluation, modifying existing and creating new software for specific needs; ensuring data security, data base backup and recovery; eliminating data redundancy and ensuring system efficiency and integrity.
The incumbent must be knowledgeable in data communications, network planning and analysis, database concepts and structures, interactive web page design, desktop systems, vendor evaluations, interfacing and/or modifying communication or database software, standard practices in related Information & Technology Services specialties (Information Desktop Analyst, Information Application Analyst and Information Systems Analyst), and is familiar with approaches used by other government or private sector Information & Technology Services organizations.

The incumbent assists and advises users and Information Technology management on major aspects of systems design, what operating mode, system software and/or equipment is most appropriate for a given project, analyzing interrelationships of data usage and defining physical data structures and logical views of data sets. He/she studies cost/benefit ratio alternatives and makes recommendations for purchases and/or leases. The incumbent may create and/or maintain servers, data storage equipment, network equipment, firewalls, operating systems, and various utility programs. The incumbent must function as a database administrator of multiple databases and as a system administrator of the UNIX/Linux and Microsoft operating systems as well as Citrix environments. A particular challenge of the position is “troubleshooting” system malfunctions and solving problems encountered by users.

The incumbent trains staff in use of new or changed operating system’s software and/or techniques. Trains in use of thin-client and/or on-line software as required. Oversees protection of database; ensures City wide data securing and integrity by establishing operational guidelines and controls including privacy, security, editing, validating and restart/recovery controls.

The incumbent performs research and development of new technologies at the direction of their management in order to deliver the recommendation on the best and most cost-effective technology solutions to meet the needs of a specific business need.

All Systems Engineers will develop and execute operating system scripts, plan projects, assist and train IT support staff and/or end users in system design and compatibility with integrated systems, manage data storage, manage virtual systems and assist with web development and other web components.

Server Administration:
The incumbent provides support and management for various operating systems and related components to achieve high performance of business applications supported by the tuning of the servers when necessary; oversees and implements upgrades when necessary; monitors and tunes operating systems performance; forecasts life cycle of server hardware and software and evaluates need for enhancements or replacements; and troubleshoots and resolves technical problems.

Database Administrator:
The Systems Engineer provides support for the management for various RDMS platforms by designing installing, maintaining and repairing database management systems. The database administrator also monitors and tunes database performance and capacity to ensure high levels of data availability and planning for future expansion. They may also plan, coordinate, and implement policies and procedures to ensure the integrity and availability of databases and their accompanying software. The incumbent must possess knowledge of business intelligence and data warehousing technologies.

Information Security Administrator:
The Systems Engineer ensures the secure operation of the enterprise computer systems, servers and network connections. This includes monitoring and analyzing server and firewall logs, scrutinizing network traffic, establishing and updating virus scans and troubleshooting. The Information Security Administrator will also analyze security breaches and vulnerability issues in a timely and accurate fashion and conduct user activity audits as required. The Information Security Administrator works with department heads and executives to evaluate acceptable levels of risks for enterprise computing platforms and is familiar with a variety of security concepts, practices and procedures.
Disaster Recover Administrator:
The incumbent ensures the security and integrity data, data systems, and data networks across the enterprise. This includes implementing disaster recovery processes and business continuity procedures for re-establishing servers, databases, operating systems, and files in the event of service disruption, corruption, security breaches and other catastrophes.

Network Administrator:
The Systems Engineer ensures the stable operations of the enterprise's local and wide area networks, as well as support for the enterprise's wireless networks. They analyze, monitor, and troubleshoot network performance. The Network Administrator designs, develops, installs, configures, maintains and tunes the network hardware, software and communication links.

Systems Engineers assigned to the Department of Central Services are expected to possess knowledge and have experience working with the following technologies or some combination thereof:

- Latest Microsoft Server and Desktop Server and Desktop Windows operating systems
- Latest Microsoft Exchange Server technologies
- Latest Microsoft Sharepoint technologies
- Unix and Linux operating systems
- Latest Oracle RDBMS technologies
- Latest SQL Server RDBMS technologies
- Server and desktop virtualization technologies (VMWare and Citrix)
- Nortel networks
- Unified Communications
- SAN/NAS storage technologies
- Backup/recovery technologies

In addition to the general responsibilities of the System Engineer, the Department of Water and the Department of Aviation incumbent is responsible for the configuration and troubleshooting of wireless networks (including all network devices). The incumbent is also responsible for the development and maintenance of all Supervisory Control and Data Acquisition (SCADA) server equipment. He/she works with outside vendors to design database schema to integrate other systems (i.e. SCADA) with the other systems database structures. They develop any programs and scripts to address database and systems issues as needed. Work may include working with department electricians and other staff in troubleshooting communication/integration issues between Programmable Logic Controllers and SCADA computer hardware and software, troubleshoot system malfunctions and resolve system issues, and related needs of systems unique to the Department of Water.

Systems Engineers assigned to the Department of Aviation are expected to possess knowledge and have experience working with the following technologies or some combination thereof:

- Latest Microsoft Server and Desktop Windows operating systems
- Latest Microsoft Exchange Server Technologies
- Unix and Linux operating systems
- Latest SQL Server RDBMS technologies
- Server and desktop virtualization technologies (VMWare)
- Cisco and Juniper networks
- SAN storage technologies
- Backup/recovery technologies (DELL/EMC Back Up Exec.)

Systems Engineers assigned to the Department of Water are expected to possess knowledge and have experience working with the following technologies or some combination thereof:

- Latest Microsoft Forefront
- Latest Business Intelligence Technologies
> Latest Data Mining, and Data Warehousing Strategies
> Cisco ASA Technologies
> McAfee Intrushield
> Data Archival Technologies
> Motorola Moto-Mesh Network
> Backup/recovery technologies (EMC Networker is preferred)
> SAP Crystal Reports Server

**Minimum Education & Experience:**

Bachelor’s Degree in Computer Science and two (2) years experience as a systems engineer and/or database administrator.  

OR

Associate’s Degree and four (4) years experience in application programming, systems analysis and design, of which two (2) years must have been as a systems engineer and/or database administrator. 

OR

Six years relevant experience, with three (3) years as a systems engineer and/or database administrator and two (2) years in application programming, systems analysis and design.

**Special Requirements:**

Must be able to pass a police background investigation.

Must have a valid driver’s license at time of appointment, and a valid State of Ohio driver’s license within 30 days of appointment as a condition of continued employment.

Certification as Microsoft Certified Systems Administrator, Microsoft Certified Information Technology Professional (DBA, Enterprise Administrator, or Server Administrator) is preferred.