SENIOR COMPUTER SYSTEMS ENGINEER

JC: EF138   **BU:** 92 (NR)

PB: 7   **FLSA:** Non-exempt

*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 within the job.*

DEFINITION

Performs a variety of professional computer systems engineering duties in the development, modification, installation and maintenance of the District's computerized equipment and systems; ensures work quality and adherence to established specifications; and performs related duties as assigned.

CLASS CHARACTERISTICS

This is the advanced journey level class in the Computer Systems Engineer series. Positions at this level possess a specialized, technical or functional expertise within the area of assignment or may exercise lead supervision over assigned lower level staff. Employees are typically assigned significant responsibilities above the journey level and often exercise judgment in the performance of all duties. This class is distinguished from the Principal Computer Systems Engineer in that the latter performs the most complex duties assigned to the series or serves in a working supervisory capacity over lower level District or contracted staff.

EXAMPLES OF DUTIES – *Duties may include, but are not limited to, the following:*

1. Performs advanced computer systems engineering duties in control of the development, modification, installation and maintenance of the District's computerized equipment and systems; designs and tests computer control systems; monitors relative systems operations; provides direction to programmers and installation staff.

2. Resolves complex computer systems malfunctions; analyzes and determines cause, takes corrective actions; recommends system modifications as required.

3. Performs system database maintenance duties including analysis of space usage, backup, recovery and performance tuning recovery; reorganizes database configuration; maintains multiple database versions to support production and systems development operations; maintains and supports on line and off line databases in multiple locations.

4. Analyzes District plant engineering changes; determines requirements for database updates; analyzes impact on other subsystems.

5. Prepares plant for short and long term modification to existing computer systems; prepares cost benefit analysis and estimates for computer system projects.

6. Designs hardware and software modifications to control and data collection systems; prepares equipment specifications and procurement contracts.

7. Develops computer operating manuals and test procedures; prepares computer hardware and software installation, modification and testing.

8. Develops and modifies various complex programming codes and scripts; acts as liaison between the District and software consultants and equipment manufacturers.

9. Provides technical computer systems engineering support for various departments throughout the District in the maintenance of computer systems operations; analyzes user requirements; provides software or hardware solutions.

10. Prepares a variety of technical reports, manuals, specifications, drawings and correspondence relevant to project areas.

11. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of computer systems engineering.

12. As assigned, may participate in training assigned employees in their areas of work including computer systems engineering design methods, procedures and techniques.

QUALIFICATIONS

Knowledge of:
-   Operations, services and activities of a comprehensive computer systems engineering program
-   Operational characteristics of computer systems and their sub-components
-   Computer programming languages and operating systems used in a variety of systems and real time applications
-   Methods and techniques of estimating and scheduling computer system modifications
-   Methods and techniques of programming and testing computer systems and applications
-   Operational characteristics of a variety of databases and operational systems
-   Methods and techniques of database management and administration
-   Computer hardware and software equipment and materials
-   Terminology, methods, practices, and techniques used in technical report preparation
-   Advanced mathematical principles
-   Current office procedures, methods, and equipment including computers
-   Principles of lead supervision and training
-   Related Federal, State and local laws, codes and regulations

Skill/ Ability in:
-   Developing, reviewing, and modifying complex computer systems
-   Leading, organizing and reviewing the work of lower level computer systems staff
-   Independently performing the most difficult computer systems engineering work
-   Reading and understanding technical drawings and specifications
-   Performing database management and administration duties
-   Interpreting and explaining District policies and procedures
-   Preparing complex computer hardware and software designs

- Monitoring project budget and schedules
- Preparing computer programs, test procedures and operating manuals
- Troubleshooting and diagnosing computer system malfunctions
- Preparing and interpreting computer hardware specifications
- Analyzing complex technical problems, evaluating alternatives, and recommending solutions
- Conducting software tests and debugging procedures
- Understanding and following oral and written instructions
- Communicating clearly and concisely, both orally and in writing
- Establishing and maintaining effective working relationships with those contacted in the course of work including District officials and the general public

MINIMUM QUALIFICATIONS

Education:
Possession of a bachelor's degree in Computer Systems, Electronics, Electrical Engineering, or a closely related field from an accredited college or university.

Experience:
The equivalent of three (3) years of full-time professional verifiable experience in computer systems engineering experience.

Substitution:
Additional professional experience as outlined above may be substituted for the education on a year-for-year basis.   A college degree is preferred.

Other Requirements:
Must possess a valid California driver's license and have a satisfactory driving record.
May be required to work overtime to test hardware and software.

WORKING CONDITIONS

Environmental Conditions:
Office environment; exposure to computer screens.

Physical Conditions:
May require maintaining physical condition necessary for walking, standing or sitting for prolonged periods of time.

BART EEO-1 Job Group: 3000 – Engineers
Census Code: 1006 – Computer Systems Analysts
Safety Sensitive: No

CLASSIFICATION HISTORY
Created :   August 2000
Revised :   October 2021
Updated :