

## **GUILFORD COUNTY SCHOOLS JOB DESCRIPTION**

### **JOB TITLE: PROGRAMMER/ANALYST I TECHNOLOGY SERVICES DEPARTMENT AUXILIARY SERVICES DIVISION**

#### **GENERAL STATEMENT OF JOB**

Under general supervision, performs specialized technical work in the preparation of computer applications and operational routines for the computer information systems in the Technology Services Department. Employee is responsible for reviewing, overseeing and participating in information system projects which include designing detailed and intricate computer applications according to user requests or defined needs; diagnosing and resolving operational problems in programs, writing necessary interfaces, incorporating web-based access and developing formats for various reports or documents. Work involves assisting personnel in the use and understanding of computer software and databases, including instruction, establishing system parameters and defining requirements. Employee must ensure standard quality levels are met and data integrity is maintained. Employee reports to the Supervisor of Systems and Programming.

#### **SPECIFIC DUTIES AND RESPONSIBILITIES**

Reviews information system project requests for schools and central office departments, determines scope of project and appropriateness, responds to request and schedules implementation if approved.

Designs and develops enterprise-wide computer applications utilizing database design techniques, web-based applications and communication methods.

Writes, tests, de-bugs, and maintains computer programs using various programming languages, query methods or standard report writers.

Uses job control language commands to submit jobs and apply corrective actions.

Works with groups of users to define needs, translates user requirements into effective program designs, establishes system parameters and develops formats for various reports and documents.

Uses query or business intelligence tools to create ad hoc queries and complex reports.

Writes interface procedures and automated processes between various database structures or computer platforms.

Uses web development tools to write interactive web applications that support, interface with or provide end user access to various computer applications.

## **PROGRAMMER/ANALYST**

Incorporates pages, forms, views in building web-based applications and automated workflow processes.

May troubleshoot hardware and software problems, determines cause of error or stoppage and applies corrective steps in cases where problems can be corrected or reports problem to appropriate staff for assistance.

Evaluates performance of existing computer systems and modifies software for optimal performance.

Performs daily system administration tasks.

Monitors new data processing projects to ensure proper function and output of computer programs.

Establishes and enforces standards, policies and procedures for computer applications.

Develops and manages system security and backup/recovery procedures for computer applications.

Maintains documentation regarding operating procedures and workflow for computer applications.

Works with operations staff to schedule processing and ensure user schedules are met.

Reviews and tests software packages and makes recommendations concerning acquisitions.

May lead or train programming staff.

Prepares instructions to guide users and prepares instructions to guide the computer operations personnel during production runs.

Assists users with developing coding systems, establishing system parameters, or defining reporting options in purchased or in-house programmed computer software.

Assists users by printing special reports and forms, restoring databases, and resolving communications problems.

### **ADDITIONAL JOB FUNCTIONS**

Performs other related work as required.

## **PROGRAMMER/ANALYST**

### **MINIMUM TRAINING AND EXPERIENCE**

Bachelor's degree in computer science or a related field, and 1 to 3 years of experience in computer programming; or any equivalent combination of training and experience which provides the required skills, knowledge, and abilities.

### **MINIMUM QUALIFICATIONS OR STANDARDS REQUIRED TO PERFORM ESSENTIAL JOB FUNCTIONS**

**Physical Requirements:** Must be physically able to operate a variety of equipment and tools including computers, scanners, adding machines, computer software, etc. Must be able to exert up to 30 pounds of force occasionally, and/or up to 5 pounds of force frequently, and/or a negligible amount of force constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Light Work usually requires walking or standing to a significant degree. However, if the use of arm and/or leg controls requires exertion of forces greater than that for Sedentary Work and the worker sits most of the time, the job is rated for Light Work.

**Data Conception:** Requires the ability to compare and/or judge the readily observable, functional, structural or composite characteristics (whether similar or divergent from obvious standards) of data, people or things.

**Interpersonal Communication:** Requires the ability to speak and/or signal people to convey or exchange information. Includes receiving instructions, assignments or directions from superiors.

**Language Ability:** Requires the ability to read a variety of correspondences, technical manuals, trade journals, newsletters, etc. Requires the ability to prepare reports, forms, system documentation, presentations, etc. using prescribed formats and conforming to all rules of punctuation, grammar, diction, and style. Requires the ability to speak to people with poise, voice control and confidence.

**Intelligence:** Requires the ability to apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions; to interpret an extensive variety of technical instructions in mathematical or diagrammatic form; and to deal with several abstract and concrete variables.

**Verbal Aptitude:** Requires the ability to record and deliver information, to explain procedures, to give oral and written instructions. Must be able to communicate effectively and efficiently in a variety of technical or professional languages including computer terminology.

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**Numerical Aptitude:** Requires the ability to utilize mathematical formulas; to add and subtract; multiply and divide; utilize decimals and percentages; and to apply the theories of algebra, geometry, and statistics.

**Form/Spatial Aptitude:** Requires the ability to inspect items for proper length, width and shape.

**Motor Coordination:** Requires the ability coordinate hands and eyes rapidly and accurately in using computer equipment.

**Manual Dexterity:** Requires the ability to handle a variety of items such as computer equipment. Must have minimal levels of eye/hand/foot coordination.

**Color Discrimination:** Requires the ability to differentiate between colors and shades of color.

**Interpersonal Temperament:** Requires the ability to deal with people beyond giving and receiving instructions. Must be adaptable to performing under stress and when confronted with persons acting under stress.

**Physical Communication:** Requires the ability to talk and hear: (Talking: expressing or exchanging ideas by means of spoken words. Hearing: perceiving nature of sounds by ear.) Must be able to communicate via telephone.

## **KNOWLEDGE, SKILLS AND ABILITIES**

Considerable knowledge of ~~mainframe~~ computer components, connectivity and operating systems.

Considerable knowledge of various methods and approaches to debugging system and program errors.

Considerable knowledge of several programming languages and of Job Control Language.

Considerable knowledge of web-based programming tools.

Considerable knowledge of microcomputer applications and interface methods.

Considerable knowledge of query tools.

Genera knowledge of network communications programming for incorporating data from various databases and computer platforms.

Considerable knowledge of automated processes within the school system.

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Considerable knowledge of department standards and procedures regarding programming and security.

Considerable knowledge of system development methodology.

Considerable knowledge of the current literature, trends and developments in the field of information systems and data processing.

Ability to evaluate the performance of hardware/software and make recommendations for improvement.

Ability to systematically determine the source of problems in a computer system and to take appropriate action.

Ability to translate user requirements into effective program designs.

Ability to evaluate requests for changes and/or updates to they system.

Ability to evaluate packaged software for use in the school system.

Ability to schedule and monitor development projects.

Ability to determine and document user requirements.

Ability to develop clear, effective instructions for operations staff and for users.

Ability to design, develop and schedule programs to ensure efficient processing.

Ability to maintain complete and accurate records.

Ability to communicate effectively both orally and in writing.

Ability to establish and maintain effective working relationships as necessitated by work assignments.

## **DISCLAIMER**

The preceding job description has been designed to indicate the general nature and level of work performed by employees within this classification. It is not designed to contain or be interpreted as a comprehensive inventory of all duties, responsibilities, and qualifications required of

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employees to this job.