

**GEOGRAPHIC INFORMATION SYSTEM PROGRAMMER ANALYST 4****Nature of Work**

Under limited supervision of a GIS Manager, at the project management or technical expert level, supervises the spatial analysis function of Geographic Information System Programmer Analysts and performs technical work in geographic information systems (GIS) analysis, application design and programming. The Geographic Information System Programmer Analyst 4 will follow one of two career paths: 1) GIS analysis; 2) application design and programming. One of the above-mentioned career paths or tracts will be emphasized. Work includes project planning and management. Work involves design and maintenance of data resources and operation of GIS software within the context of programs and policy directives. Work includes advanced GIS analysis, application development and other GIS related activities. Work is performed with considerable independence and is reviewed through reports, conferences, and system effectiveness. Performs related work as required.

**Distinguishing Characteristics**

At this level, an incumbent serves in a project management role and/or supervises GIS staff.

**Examples of Work**

- Performs GIS analysis at the expert level, serving as technical advisor.
- Supervises and trains subordinate staff in GIS activities. Assigns tasks, monitors the overall project progress, and reviews work upon completion.
- Analyzes user organization functional requirements and develop GIS application designs.
- Writes and tests GIS application programs; prepares documentation of GIS application programs.
- Prepares GIS application user manuals; trains GIS staff in the operation of GIS applications.
- Performs GIS hardware and software operations; performs activities associated with implementation, operation, and enhancement of the GIS hardware and software.
- Assists in designing and enforcement of GIS database standards for content.
- Produces or reviews preliminary and detailed designs for new or modified database elements.

**GEOGRAPHIC INFORMATION SYSTEM PROGRAMMER ANALYST 4 (CONT'D)****Examples of Work (cont'd)**

Investigates and recommends sources and approaches for automating GIS database elements.  
May work as part of an inter-agency cooperative effort.

**Knowledge, Skills and Abilities**

Knowledge of GIS software used by employing agency.  
Knowledge of automated mapping and spatial information processing methods and techniques.  
Knowledge of the capabilities of automated mapping and geographic information processing systems.  
Knowledge of cartographic design and drafting principles, automated mapping and GIS database design.  
Knowledge of GIS hardware and software components, data communication, and network methods and techniques.  
Ability to perform project management.  
Ability to design, program and support GIS application programs.  
Ability to give instructions and direct the activities of other programmer analysts and/or GIS staff.  
Ability to reason logically and to communicate effectively with system users to translate application concepts into system applications.  
Ability to translate technical concepts and terminology in terms understandable to system users.  
Ability to establish and maintain effective relationships with user departments, administrative officials, and employees.

**Minimum Qualifications**

**Training:** Bachelor's degree, including six semester hours in computer science or GIS from an accredited college or university. Preference may be given to those with degrees in geography, cartography, geology, forestry, natural or earth sciences, environmental sciences, engineering, engineering technology, mathematics, computer science, planning or a related field.

**Experience:** Six years of full-time or equivalent part-time paid experience in GIS activities.

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GEOGRAPHIC INFORMATION SYSTEM PROGRAMMER ANALYST 4 (CONT'D)

**Minimum Qualifications (cont'd)**

**Substitution:** Master's degree or a doctorate from an accredited college or university in any of the above fields may be substituted for two years of the required experience. Master's degree plus a doctorate from an accredited college or university in any of the above preferred fields may be substituted for three years of the required experience.

Substitution: A professional diploma from National Geospatial-Intelligence College of the National Geospatial-Intelligence Agency may substitute for the training.

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