



**CLASS SERIES DESCRIPTION**  
**T1D - GEOGRAPHIC INFORMATION SYSTEMS**  
**T1D1XX - T1D6XX**

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**Description of Occupational Work**

This class series uses six levels in the Information Technology Occupational Group and describes work with geographic information systems (GIS) applications to collect, process, and disseminate geospatial data. Positions in these classes utilize GIS software and hardware to produce maps and graphs for use in spatial analysis. Work involves the design, development, and maintenance of geospatial databases. Work may include technical oversight for GIS applications.

**T1D1XX GEOGRAPHIC INFORMATION SYSTEMS I**

**Concept of Class**

This class describes the fully-operational technician or entry level professional. Technicians operate independently in performing the full range of technical duties and problem-solving. Although positions carry out defined work procedures and processes, judgment is required on an ongoing basis to select the most appropriate technical guidelines and adapt them to accomplish tasks. Positions continually determine practical solutions to problems by applying specified processes, techniques, and methods. Entry level professional positions perform tasks that are structured and designed to provide training and experience. Tasks are performed under direct supervision and detailed instruction and guidance is received. Entry professionals learn to apply theories and principles of the professional information technology field. Technical assignments will not move beyond this level. Entry professional positions do not remain at this level indefinitely.

**Factors**

Allocation must be based on meeting all of the three factors as described below.

- 1) **Decision Making:** The decisions regularly made are at the defined level, as described here. Within limits prescribed by the operation, choices involve selecting alternatives that affect the manner and speed with which tasks are carried out. These choices do not affect the standards or results of the operation itself because there is typically only one correct way to carry out the operation. Alternatives include independent choice of such things as priority and personal preference for organizing and processing the work, proper tools or equipment, speed, and appropriate steps in the operation to apply. By nature, the data needed to make decisions can be numerous but are clear and understandable so logic is needed to apply the prescribed alternative. Positions can be taught what to do to carry out assignments and any deviation in the manner in which the work is performed does not change the end result of the operation.

- 2) Complexity: The nature of, and need for, analysis and judgment is patterned, as described here. Positions study technical information to determine what it means and how it fits together in order to get practical solutions to problems and tasks. Guidelines in the form specified processes, techniques, and methods exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.
- 3) Line/Staff Authority: The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

## T1D2XX GEOGRAPHIC INFORMATION SYSTEMS II

### Concept of Class

This class describes the intermediate level. Positions operate independently in performing assignments that are limited to phases of a fully-operational professional assignment or which may be designed to provide continued training and experience. Work requires determining solutions to practical problems using specified professional standards and established criteria. Judgment is used to select and apply existing guidelines to solve problems and accomplish the assignment.

### Factors

Allocation must be based on meeting all of the three factors as described below.

- 1) Decision Making: The decisions regularly made are at the operational level, as described here. Within limits set by the specific process, choices involve deciding what operation is required to carry out the process. This includes determining how the operation will be completed. By nature, data needed to make decisions are numerous and variable so reasoning is needed to develop the practical course of action within the established process. Choices are within a range of specified, acceptable standards, alternatives, and technical practices.
- 2) Complexity: The nature of, and need for, analysis and judgment is patterned, as described here. Positions study technical information to determine what it means and how it fits together

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in order to get practical solutions to problems and tasks. Guidelines in the form specified processes, techniques, and methods exist for most situations. Judgment is needed in locating and selecting the most appropriate of these guidelines which may change for varying circumstances as the task is repeated. This selection and interpretation of guidelines involves choosing from alternatives where all are correct but one is better than another depending on the given circumstances of the situation.

- 3) Line/Staff Authority: The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

### **T1D3XX GEOGRAPHIC INFORMATION SYSTEMS III**

#### **Concept of Class**

This class describes the fully operational professional. Positions operate independently in performing the full range of professional tasks. Work requires the use of discretion and creativity within limits of theory and principles of the profession; management's program objectives; law and regulations; and, general systems and guidelines. Judgment is used in the adaptation and skilled application of guidelines to solve the full range of problems related to the assignment. An employee in this class must anticipate and analyze the impact and consequences of decisions made. Positions may serve as a resource to others or a specialist in the professional field.

#### **Factors**

Allocation must be based on meeting all of the three factors as described below.

- 1) Decision Making: The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. The general pattern, program, or system exists but must be individualized. This individualization requires analysis of data that is complicated. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in work processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. New processes or objectives require approval of higher management or the agency with authority and accountability for the program or system.

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- 2) Complexity: The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of theories, concepts, and principles in order to tailor them to develop a different approach or plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate and are therefore relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies.
  
- 3) Line/Staff Authority: The direct field of influence the work of a position has on the organization is as an individual contributor. The individual contributor may explain work processes and train others. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

## T1D4XX GEOGRAPHIC INFORMATION SYSTEMS IV

### Concept of Class

This class describes the work of project leader or staff authority. Work leaders exercise some control over the continual work product of others. Project leaders do so on an ongoing project basis where the projects are critical to the agency's mission and fundamental business operations. Staff authorities possess a unique level of knowledge and expertise in a professional field that is needed by the agency to support its overall mission. Agency management routinely relies on the essential consultation of the authority before deciding broad, critical program and policy direction. The consultation provided is accepted as fact and not refuted on its technical merit, even if management does not act on it for political or budgetary reasons. Staff authorities are authorized to take action and issue expert opinions that provide direction for further action by others. Authorities design strategy, systems, processes, guidelines, rules, and standards that are mission critical and directly impact the agency's ongoing operation and broad program or policy. Staff authority is delegated by agency management, beyond the immediate supervisor.

### Factors

Allocation must be based on meeting all of the three factors as described below.

- 1) Decision Making: The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. The general

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pattern, program, or system exists but must be individualized. This individualization requires analysis of data that is complicated. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in work processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. New processes or objectives require approval of higher management or the agency with authority and accountability for the program or system.

- 2) **Complexity:** The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of theories, concepts, and principles in order to tailor them to develop a different approach or plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate and are therefore relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies.
  
- 3) **Line/Staff Authority:** The direct field of influence the work of a position has on the organization is as a work/project leader or staff authority. The work/project leader is partially accountable for the work product of two or more full-time equivalent positions, including timeliness, correctness, and soundness. At least one of the subordinate positions must be a professional level in the same series or at a comparable conceptual level. Typical elements of direct control over other positions by a work/project leader include assigning tasks, monitoring progress and work flow, checking the product, scheduling work, and establishing work standards. The work/project leader provides input into supervisory decisions made at higher levels, including signing leave requests and approving work hours. This level may include positions performing supervisory elements that do not fully meet the criteria for the next level in this factor.

OR

The staff authority is a pacesetter who has a unique level of technical expertise in a field or profession that, as part of the ongoing permanent assignment, is critical to the success of an agency. It is an essential component of the work assignment that has been delegated by management to the position. This authority directly influences management decisions within the agency. For example, management relies on such a position when making decisions regarding the direction that policy or a program should take in the staff authority's field of expertise. Managers and peers recognize and seek this level of technical guidance and direction regarding the application of a program or system within the agency or to its clients.

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**T1D5XX GEOGRAPHIC INFORMATION SYSTEMS V**

**Concept of Class**

This class describes the supervisor or senior authority. Supervisors exercise direct, formal control over others. Senior authorities possess a unique level of knowledge and expertise in a professional field that is needed by the agency to support its overall mission. Agency management routinely relies on the essential consultation of the authority before deciding broad, critical program and policy direction. The consultation provided is accepted as fact and not refuted on its technical merit, even if management does not act on it for political or budgetary reasons. Senior authorities are authorized to take action and issue expert opinions that provide direction for further action by others. Authorities design strategy, systems, processes, guidelines, rules, and standards that are mission critical and directly impact the agency’s ongoing operation and broad program or policy. Senior authority is delegated by agency management, beyond the immediate supervisor.

**Factors**

Allocation must be based on meeting all of the three factors as described below.

- 1) **Decision Making:** The decisions regularly made are at the process level, as described here. Within limits set by professional standards, the agency's available technology and resources, and program objectives and regulations established by a higher management level, choices involve determining the process, including designing the set of operations. The general pattern, program, or system exists but must be individualized. This individualization requires analysis of data that is complicated. Analysis is breaking the problem or case into parts, examining these parts, and reaching conclusions that result in work processes. This examination requires the application of known and established theory, principles, conceptual models, professional standards, and precedents in order to determine their relationship to the problem. New processes or objectives require approval of higher management or the agency with authority and accountability for the program or system.
  
- 2) **Complexity:** The nature of, and need for, analysis and judgment is formulative, as described here. Positions evaluate the relevance and importance of theories, concepts, and principles in order to tailor them to develop a different approach or plan to fit specific circumstances. While general policy, precedent, or non-specific practices exist, they are inadequate and are therefore relevant only through approximation or analogy. In conjunction with theories, concepts, and principles, positions use judgment and resourcefulness in tailoring the existing guidelines so they can be applied to particular circumstances and to deal with emergencies.
  
- 3) **Line/Staff Authority:** The direct field of influence the work of a position has on the organization is as a unit supervisor or senior authority. The unit supervisor is accountable,

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including signature authority, for actions and decisions that directly impact pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be a professional level in the same series or at a comparable conceptual level. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

OR

The senior authority is a pacesetter who has a unique level of technical expertise in a field or profession that, as part of the ongoing permanent assignment, is critical to the success of an agency. It is an essential component of the work assignment that has been delegated by management to the position. This authority directly influences management decisions beyond the agency. Managers and peers seek this level of technical guidance and direction as the designer of a statewide system or in a subject area for other areas of state government. Managers and peers, both internally and externally to the agency, rely on this pacesetter when making decisions regarding the direction that policy, programs, and systems should take in the pacesetter's field of expertise.

## **T1D6XX GEOGRAPHIC INFORMATION SYSTEMS VI**

### **Concept of Class**

This class describes the first-level program supervisor. Positions manage the daily operation of a work unit. Positions determine the annual business plans that integrate with the agency's mission and goals, determine implementation policies and guidelines, develop budgets, establish staffing and directly control the work of others. Work involves directing the implementation of policies, rules, and regulations.

### **Factors**

Allocation must be based on meeting all of the three factors as described below.

- 1) **Decision Making:** The decisions regularly made are at the interpretive level, as described here. Within limits of the strategic master plan and allocated human and fiscal resources, choices involve determining tactical plans to achieve the objectives established by the highest management level. This involves establishing what processes will be done, developing the budget, and developing the staffing patterns and work units in order to deploy staff. This level includes inventing and changing systems and guidelines that will be applied by others statewide. For example, authorities design the strategy, system, process, guidelines, rules and standards that are used by others in state government. While an authority may not directly supervise staff or a budget, such a position is often involved in formulation of budgets and

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staffing patterns as part of the design of a system. By nature, this is the first level where positions are not bound by processes and operations in their own programs as a framework for decision making and there are novel or unique situations which cause uncertainties that must be addressed at this level. Through deliberate analysis and experience with these unique situations, the manager or expert determines the systems, guidelines, and programs for the future.

- 2) **Complexity:** The nature of, and need for, analysis and judgment is strategic, as described here. Positions develop guidelines to implement a program that maintains the agency's mission. Guidelines do not exist for most situations. In directive situations, positions use judgment and resourcefulness to interpret circumstances in a variety of situations and establish guidelines that direct how a departmental/agency program will be implemented.
  
- 3) **Line/Staff Authority:** The direct field of influence the work of a position has on the organization is as a unit supervisor. The unit supervisor is accountable, including signature authority, for actions and decisions that directly impact pay, status, and tenure of three or more full-time equivalent positions. At least one of the subordinate positions must be a professional level in the same series or at a comparable conceptual level. The elements of formal supervision must include providing documentation to support recommended corrective and disciplinary actions, signing performance plans and appraisals, and resolving informal grievances. Positions start the hiring process, interview applicants, and recommend hire, promotion, or transfer.

### **Entrance Requirements**

Minimum entry requirements and general competencies for classes in this series are contained in the class minimum qualifications document.

For purposes of the Americans with Disabilities Act Amendments Act (ADAAA), the essential functions of specific positions are identified in the position description questionnaires and job analyses.

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Summary of Factor Ratings

Class Level	Decision Making	Complexity	Line/Staff Authority
Geographic Information Systems I	Defined	Patterned	Individual Contributor
Geographic Information Systems II	Operational	Patterned	Individual Contributor
Geographic Information Systems III	Process	Formulative	Individual Contributor
Geographic Information Systems IV	Process	Formulative	Work Leader or Staff Authority
Geographic Information Systems V	Process	Formulative	Unit Supervisor or Senior Authority
Geographic Information Systems VI	Interpretive	Strategic	Unit Supervisor

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The following is a summary of changes made to this class description:

Section / Paragraph	Change Description	Effective Date
Document	Created. Information Technology Professional System Maintenance Study; deconsolidation and abolishment of IT Professional series (T1A1TX to T1A4XX).	07/01/2021
Class Code	Update the Class Code of T1A1TX to T1A4XX per administrative updates.	07/01/2018
Factors	Updated and removed the purpose of contact.	06/30/2015
Document	Consolidate Applications Programmer Intern (H2A1IX), Information Technology Technician I (H2I1), and Information Technology Technician II (H2I2) into the IT Technician (H2A1XX). Consolidate Applications Programmer I (H2A2TX), Applications Programmer II (H2A3XX), Applications Programmer III (H2A4XX), Information Technology Professional I (H2I3), Information Technology Professional II (H2I4), and Information Technology Professional III (H2I5) into the IT Professional (H2A2XX). Consolidate Information Technology Professional IV (H2I6) and Information Technology V (H2I7) into the IT Supervisor (H2A3XX). Consolidate Programming Manager (H2A6XX), Information Technology Professional VI (H2I8), and Information Technology Professional VII (H2I9) into the IT Manager (H2A4XX). Published proposed 6/4/12.	07/01/2013
Document	PS consolidation study consolidated Operating System Programmer/Analyst I - IV. Published draft 2/17/98 and proposed 3/20/98.	07/01/1999
Document	PS consolidation study consolidated Database Analyst/Administrator (H2C), Data Processing Manager (H2D), Operating Systems Manager (H2F5), Network Services (H2E), Programmer/Analyst (H2G), and Scientific Programmer/Analyst (H2H). Published draft 2/17/98 and proposed 3/20/98.	09/01/1998

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Document	Revised Network Services to include the Network Technician (H2E2TX).	08/01/1994
Document	Revised. Adjustment to Operating Systems Programmer/Analyst (H2F) and Programmer/Analyst (H2G) class descriptions as result of system appeal decision.	05/01/1994
Document	Job Evaluation System Redesign Project. Created Database Analyst/Administrator (H2C). Revised Data Processing Manager (H2D), Network Services (H2E), Operating Systems Programmer/Analyst (H2F), Programmer/Analyst (H2G), Published as proposed 6/1/93.	09/01/1993
Document	Revised. Change in occupational group for Data Processing Manager I-III (A2795 - A2797), Software Programming Manager (A2791), Systems Analysis Manager (A2792).	01/01/1992
Document	Revised. Change in promotion statement for Senior and Principle Systems Analyst (A2782 - A2783).	01/01/1981
Document	Revised. Changed entrance requirements for Data Processing Manager I - III (A2795 - A2797). Changed minimum qualifications and class concepts for Software Programmer A - B (A2760 - A2761); minimum qualifications for Senior and Principle Software Programmers (A2762 - A2763), distinguishing features and minimum qualifications for Software Programming Manager (A2791). Addition of options, change nature of work, some examples of work, knowledge, skills and abilities, minimum qualifications for Systems Analyst A, B, Senior and Principle Systems Analyst (A2780 - A2783), distinguishing features and minimum qualifications for Systems Analysis Manager (A2792). Changed distinguishing features and minimum qualifications for Scientific Programmer A, B and Senior (A2770 - A2772).	07/01/1979
Document	Created. Data Processing Manager I-III (A2795 - A2797); Software Programmer A, B, Senior, Principle, and Manager (A2760 - A2763 and A2791); Systems Analyst A, B, Senior, Principle and System Analysis Manager	01/01/1975

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	(A2780 - A2783 and A2792); and Scientific Programmer A, B and Senior (A2770 - A2772).	
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