

Position Allocation Matrix for Use in Evaluating Information Technology Specialist classes 1 – 5

Class Level	ITS-1	ITS-2	ITS-3	ITS-4	ITS-5
Nature & Purpose & Scope of Work	<p>-Entry professional IT work.</p> <p>-Focus of the job is primarily implementation and platform dependent applications rather than design or planning.</p> <p>Job functions indicators include:</p> <p>-Provides entry-level report writing services, help desk support, basic network technical support and/or work station administration;</p> <p>-Provides peripheral equipment support (e.g, printers, scanners, faxes, cameras), wireless networking, Laptop support etc.</p>	<p>-General proficiency in information technology.</p> <p>-Focus of the job may be the same as ITS1 but with wider breadth of expertise, more accountability for the work, more independence; responsible for standard and routine programming, LAN/WAN administration, network operation and support or work station administration.</p> <p>Job functions indicators include:</p> <p>-Installs software on work stations and acts as consultant to users;</p> <p>-Installs server software and operates and maintains network operating systems;</p> <p>-Database responsibilities are concentrated on end-user databases (dBase, Paradox, FoxPro, Access, etc.);</p> <p>-Codes program modules both for new systems and for modification of existing systems;</p> <p>-Creates procedure and program specifications;</p> <p>-Prepares test data for and assists with testing and debugging of subsystems;</p> <p>-May assist with analysis and design work such as web development & design, database development, file systems.</p> <p>-All work assigned should be professional level duties.</p>	<p>-Specializes in a particular area of technology and considered agency-wide expert or may serve as a lead-worker over a variety of IT areas.</p> <p>-Oversees systems or projects and participates in collaborative endeavors;</p> <p>-Independently completes projects or significant parts of large projects with agency-wide impact;</p> <p>-Limited technical direction.</p> <p>Job functions indicators include:</p> <p>-Less time is spent on coding and testing than at the lower levels and work may involve relational database systems;</p> <p>-Participates in analyzing and designing systems, networks and applications rather than implementation only;</p> <p>-May provide lead work direction to others;</p> <p>-Manages the infrastructure (not lead on infrastructure);</p> <p>-Works with a variety of business applications and has to integrate both LAN & WAN networks.</p>	<p>-Advanced specialized information technology knowledge.</p> <p>-Emphasis of jobs involves overall system problems, needs, and new requirements NOT maintenance of existing systems;</p> <p>-Able to solve agency-wide problems that may have impact on other state agencies; serves as project managers for large, complex projects that involve a number of IT professionals; OR technical specialists performing system analysis, systems programming or network design and database administration (DBA) on large, complex systems (e.g., system crosses more than an office or business area or has multiple interfaces between systems and data sources or is critical to the agency).</p> <p>Job functions indicators include:</p> <p>-Documents, implements, assures development of standards for systems;</p> <p>-Administers multifaceted relational databases on one or more platforms;</p> <p>-Develops access security and/or disaster recovery plans;</p> <p>-Analyzes business processes and data requirements and translate into IT solutions;</p> <p>-Design and model data structures;</p> <p>-Design and develop GIS applications, programs, and training tools and provide support for maintenance of data layers;</p> <p>-Designs application (or approves design), sets budgets, oversees work of project team;</p> <p>-Leads a team in the implementation and design of major projects.</p>	<p>-Considered the key expert in a specific technology area and sought out by other seasoned practitioners for advice and standards.</p> <p>-Focus of work is on investigating new technologies and making recommendations on the best technology fit for agency or statewide use.</p> <p>Job functions indicators include:</p> <p>-Analyzes, designs and approves systems, networks or applications;</p> <p>-Plans, sets design direction, designs major systems, develops architecture;</p> <p>-Sets technical standards;</p> <p>-Oversees multiple projects of varying size and scope;</p> <p>-Acts as project manager or lead worker/coach to other advanced technical specialists on systems and projects of the greatest scope and complexity.</p>

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Knowledge, Skills & Abilities	<p>Knowledge of:</p> <ul style="list-style-type: none"> -Basic Information technology theory; -Basic network configuration of hardware, software and networking protocol. May include installing low voltage cabling, switches, and raceway conduit. May use TCP/IP protocol or Novell or Microsoft Networking software; -All facets of workstation administration; -Various operating systems; -Installation and support of peripheral equipment such as printers, scanners, faxes, cameras, etc. ; -Help desk work order documentation software; -Website technical support ; -Multiple desktop productivity software applications at a subject matter expert level to provide desktop support (e.g., Microsoft Office applications). 	<p>Knowledge of:</p> <ul style="list-style-type: none"> -Understand IT theory; -Broad range of software and hardware sufficient to serve as a consultant to support end-users; -Basic programming code to assist with design and development of an application; -Trouble shooting techniques sufficient to diagnose and solve IT issues. -Applying security practices and standards. <p>Examples of specific knowledge depending on position:</p> <ul style="list-style-type: none"> -Applications: programming, development of program specifications, design, code, test/debug and document structured computer programs (e.g., basic use of programming languages, such as HTML, XHTML, Java Script, C++, Cascading Style Sheets, and SQL); -Database systems, Oracle, DB2, SQL Servers; -File protocol systems, e.g., FTP or SFT; -Able to use software, e.g., Adobe PhotoShop, Adobe Illustrator, Macromedia DreamWeaver, 3D Studio Max, V-Ray, Flash & Action Script, Torque Game Engine (TGE), or equivalent software; -ADA guidelines for web development). -GIS: technologies, analytical methods, cartographic techniques and software. 	<p>Knowledge of:</p> <ul style="list-style-type: none"> -Specific technology to complete major projects independently; -Computer, telecommunications protocol and peripheral equipment capabilities; -Information systems analysis and design techniques; -Complex data processing systems, software and equipment sufficient to make recommendations for purchase and implementation; -Business needs. <p>Examples of specific knowledge:</p> <ul style="list-style-type: none"> -Full understanding of information architecture & systems. -General database management and administration, e.g., Oracle, Sybase Informix, SQL Server, DB2. -May assist with logical/physical dbase design, development, & modifications -Applications, web & database and network protocol languages and/or scripting, e.g., ASP, Perl, Cold Fusion, MySQL, Visual Basic, ODBC, .NET, VB or VB Script, PowerShell, Moodle backbone, and/or XML HTML, JavaScript, YUI, JSP internet protocols, or object modeling techniques, Java/J2EE development. -Network configurations: managing network performance for multiple network services, e.g., backbone, SNA, router and X.25 service, desktop hardware, server hardware, remote access and video. -Systems software eval & upgrading for UNIX, MVS, Novell, Windows. 	<p>Knowledge of:</p> <ul style="list-style-type: none"> -Methods and techniques of system analysis and design; -Agency/enterprise level project management principles and practices sufficient to determine program direction, plan work and set goals, monitor and evaluate accomplishments; -Agency policies, procedures, programs and business goals. <p>Examples of specific knowledge:</p> <ul style="list-style-type: none"> -Database systems administration, e.g., Oracle development tools, VRML, SQL Plus, PL/SQL, SQL Loader, TOAD. -Application and/or object oriented programming for high-end database architecture e.g., ASP.NET, J2EE frameworks such as JBoss, Spring, SOAPS, Hibernate. -Network management: optimizing network performance for multi-protocol services with higher level tech software tools, e.g., CGI, Extranets, portals, SAN's, OOPs, CSU/DSUs, Cisco product line, IPX and TCP/IP protocols and cloud-base applications. 	<p>Knowledge of:</p> <ul style="list-style-type: none"> -Technical authority in an option area; - Expert knowledge and experience in development methodologies; -Able to apply techniques such as; conceptual (planning level), logical (design level), and physical (implementation level) data application and process modeling -Quality assurance methodologies for design, development and testing; -Theory and practice of business management as applied to government agencies. <p>Examples of specific knowledge:</p> <ul style="list-style-type: none"> -Information architecture & strategic information systems: conduct capacity planning; integrate multiple systems that have a broad scope and major impact on the work of the agency or statewide technology programs; hardware and software components and capabilities of information systems architecture sufficient to design systems and subsystems that meet specifications, standards and assure a stable, reliable computing environment. -Database management systems administration: Oracle Database Management tools, e.g., Enterprise Manager (OEM), Oracle Recovery Manager (RMAN); Oracle PL/SQL programming; OLAPs; physical data modeling; data conversion technology and methodologies.

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Knowledge, Skills & Abilities continued	<p>-Able to write clearly and coherently using proper grammar, spelling, and syntax; -Human relation skills that include courtesy and ability to work well with colleagues, clients and team members; -Able to multi-task.</p> <p>Education & Experience: - IT education and/or experience; -No analysis or design work.</p>	<p>-Able to write documents and proposal that are clear and coherent and use proper grammar spelling and syntax.</p> <p>Education & Experience: -At least 2 years current IT experience; -Demonstrates ongoing professional development; -Prefer at least one year of IT experience in agency's industry (e.g., higher education).</p>	<p>Examples of specific knowledge: -Basic object oriented programming languages and techniques (e.g., VB.NET, ASP.Net, JAVA, Simula, Smalltalk, Modula-3, Self, Eiffel, Sather, C++, Ada95, CLOS, SOOL, Objective C, C#, Object Pascal (Delphi), PL/SQL, SQL). -Generally accepted security principles, standards, and legal compliance issues including security monitoring, intrusion detection, log and event management, computer forensics, vulnerability and threat management, penetration testing, and secure system and network design. -Able to write sufficiently to provide clear objectives and supporting documentation; -Able to develop and present proposed/recommended objectives to management; -Able to perform high level fault analysis which may include performance & capacity management and use business needs information in making decisions on structure of systems and types of technology; -Able to understand, evaluate, assess and implement project plans.</p> <p>Education & Experience: -At least 3 years of current IT experience in the specialty area or variety of IT areas; -Demonstrates on-going professional development, e.g., certifications, etc.; -Prefer at least one year of IT experience in agency's industry (e.g., higher education).</p>	<p>-Conflict resolution and consensus building skills are critical; -Able to understand ramifications and consequences of decisions made; -Able to collaborate on solutions; -Able to plan, lead and schedule major systems effort and provide work direction and guidance to others; -Able to work on multiple projects or move between different platforms.</p> <p>Education & Experience: -At least 5 years of advanced IT skills while demonstrating increased technical competency in a specialty area. -Demonstrates on-going professional development; preferred certifications in specialty areas such as project management, network administration, database administration, security management, etc.</p>	<p>Examples of specific knowledge: - Object oriented programming languages and techniques: such as Object Oriented Analysis and Design (OOAD), prototyping, rapid application development, and case tools;</p> <p>-Able to document complete business requirements to develop application programs; -Interact, both technically w/staff & vendors and functionally w/users, through written & verbal communication sufficient to present clear and concise reports, to interview and to coach.</p> <p>Education & Experience: -At least 6 years of advanced IT skills while demonstrating increased technical competency in a specialty area. -Possesses advanced industry recognized certifications in specialty areas; -Demonstrates on-going professional development.</p>

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Innovative Thinking & Problem Solving	<p>-Ability to analyze information requirements and think in a logical manner; -Work is fairly routine and the employee is expected to apply established procedures, methods and standards.</p> <p>-Assigned straight-forward tasks for parts of projects; -Project objectives and concepts are well-defined for the incumbent.</p>	<p>-Diagnoses and solves problems at desktop level, or end-user level using standard trouble-shooting tools and techniques; -Applies standard trouble-shooting tools and techniques to local area and/or wide area network issues; -Ability to develop queries and reports for data access and analysis.</p> <p>-Assigned parts of projects or entire, fairly straight-forward projects.</p>	<p>-Analyzes & designs networks and applications which may include planning & implementation; -Supports relational databases (DB2, Oracle, Sybase,SQL) on one or more platforms; -Knowledge of business functions and goals is used independently in design or administration of system; -Cognizant of inter-relational aspects of their work and how it impacts other agencies as a whole.</p> <p>-Manages several assignments simultaneously; -Manages projects and/or significant parts of projects agency-wide.</p>	<p>-Recommends new technology to meet business needs for multifaceted systems; -Lead collaboration with business owners in understanding their needs to recommend and implement IT solutions.</p> <p>-Responsible for producing decisions and recommendations for situations with competing interests and potential multiple solutions.</p>	<p>- Leads problem-solving teams for the agency or statewide. Evaluates problem-solving methodologies and facilitates adoption of methodology(ies). -Analyzes and resolves very complex problems, such as multiple product problems, dump analysis, or major conflicts caused by a new hardware or software version. -Analyzes recovery scenarios and develops on-site backup requirements. Defines and implements on-site backup and recovery procedures and schedules. -Reacts to problems with extremely tight time constraints and with significant financial consequences. -Develops and writes security and emergency recovery plans. Writes operational controls. Leads the design and implementation of security intrusion detection. - Able to conceptualize network configuration and technologies to meet new and evolving customer service requirements. -Able to conceptualize systems and detail system flows at the data element level sufficient to integrate all parts of the system.</p>

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Strategic Planning & Assessment & Resource Management	-Serves as level 1 help-desk support, solving routine issues.	-Serves as a resource to a larger, more varied clientele and have responsibility for larger or more technical systems ; -Serves as a level 2 help-desk support, taking on more complex and less routine types of problems.	-Serves as a high level technical resource for the agency; -Participates in technical design of complex systems with agency-wide impact. -Able to assess operations (equipment, staff, training, etc.) needs sufficient to establish priorities and develop budget recommendations. -Able to project future IT needs, analyze/develop alternatives, and recommend action sufficient to provide technical assistance to management in the long-range planning process ; -Completes or participates in preparation of cost-benefit analysis.	-Recommends system controls and security measures. -More involved in assessing IT needs and introducing new technology. -Develops and recommends a replacement plan budget for maintaining and upgrading hardware or software; - Develops resource estimates and project plans , ensuring the scope represents a manageable sized project.	-Deals with cutting edge technology and able to maximize the effectiveness of new technology as appropriate. -Responsible for long-range planning and design of system architecture and structure. -Writes project charters, cost/benefit analyses and requests for proposals, and evaluates the responses for major systems. Writes feasibility studies, acquisition plans, and decision packages for high visibility/impact initiatives.
Policy, Procedures, Laws & Regulations	-Follows well-defined policy and procedures.	-Expected to apply established procedures, methods and standards in work that is primarily implementation and fault analysis using multiple technologies with some design work added as experience grows.	-Considerable knowledge of the organization mission, goals, policies and processes.	-Recommends policies and standards for new technologies and procedures.	-Develops and recommends policies and standards for new technologies and procedures. -Implements technical policy.

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Decision making & accountability & impact	<p>-Some positions are accountable for maintaining inventory of IT/computers, multi-media equipment & software licenses for their agency.</p> <p>-Works under immediate supervision: work assignments are well-detailed & well-prescribed, little opportunity exists to exercise personal initiative, discretion, or judgment; responsible for accurate & proper application of the steps of the well-established work process.</p> <p>-May work under general supervision: under fairly close supervision administratively, given some latitude technically; assignments & objectives are prescribed, but the methods are not typically reviewed nor controlled while the work is in progress; expected to take initiative in solving most problems, except those which are new or unusually complex.</p> <p>-Work is overviewed by the supervisor on a day-to-day basis or is well defined.</p>	<p>-Expected to make independent decisions on organizing and completing assignments/routine projects and appropriate methods for the work.</p> <p>-Works under general supervision: under fairly close supervision administratively, given some latitude technically; assignments & objectives are prescribed, but the methods are not typically reviewed nor controlled while the work is in progress; expected to take initiative in solving most problems, except those which are new or unusually complex.</p> <p>-Employees are not closely supervised, except when doing work which is unfamiliar or part of a larger project(s).</p>	<p>-Makes most technical decisions independently;</p> <p>-Defines what needs to be done.</p> <p>-Responsible for all facets of complex assignments and/or significant parts of complex projects or projects with agency-wide impact ;</p> <p>-Collaborates with others to complete major projects;</p> <p>-Provides project management expertise including human relations skills (providing leadership to team).</p> <p>- Works under limited supervision: considerable freedom from both technical and administrative oversight while the work is in progress; substantial degree of responsibility and independence in planning and organizing own work.</p> <p>-Supervisors typically review accomplishments rather than work in progress.</p>	<p>-Makes decisions on systems configuration;</p> <p>-Makes recommendations on types of technology;</p> <p>-Accountable for project results or system operation results, e.g., network up-time, disaster recovery, continuation of business plans, security, etc.;</p> <p>-Accountable for communicating to business owners and end-users project or system plans, needs, results;</p> <p>-May have financial accountability for project budgets;</p> <p>- Works under limited supervision: considerable freedom from both technical and administrative oversight while the work is in progress; substantial degree of responsibility and independence in planning and organizing own work.</p> <p>-Understands ramifications and consequences of risks and develops mitigation plans.</p>	<p>-Responsible for systems with the highest degree of impact and complexity (consequences or error can be costly for the agency and its clients and may prevent them from meeting their goals and keeping data secured);</p> <p>-Able to negotiate complex solutions (e.g., multiple platforms with multiple systems, etc.) to technical problems, while ensuring the solutions meet the defined business needs in a cost effective manner.</p> <p>- Works under administrative direction: free from active technical control in planning and carrying out responsibilities; control is exercised managerially where matters such as policy development and coordination, intermediate/long range planning, and budgeting and expending of funds are involved; reports periodically, usually by means of conferences, to discuss work progress or new problems which require advice of an administrative nature.</p>

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Leadership & Management	-May provide lead work direction to lower level technicians, student workers or college lab assistants.	-May provide lead work direction to lower level IT staff, other technical staff and student workers.	-Directs the work of other employees, may be lead worker; -Defines what needs to be done, including project planning and task management; -Directs assignments or projects.	-Motivates others to collaborate on solutions and integrate system components; -Leads a team in the implementation and design of major development projects.	-Viewed as the expert or highest level of specialized technical expertise in IT. -Coaches and serves as a mentor to other “seasoned” IT professionals on cutting edge technology. -Liaison to business owners and stakeholders on technical issues and alternative technology solutions.

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