California State Personnel Board Specification

Information Technology Series

Schem Code	Class Code	Classification Title	Probation Period
LM70	1400	Information Technology Technician	12 months
LM71	1401	Information Technology Associate	12 months
LM72	1402	Information Technology Specialist I	12 months
LM77	1414	Information Technology Specialist II	12 months
LM78	1415	Information Technology Specialist III	12 months
LM73	1403	Information Technology Supervisor I	12 months
LM74	1404	Information Technology Supervisor II	12 months
LM75	1405	Information Technology Manager I	12 months
LM76	1406	Information Technology Manager II	12 months

SALARY INFORMATION

This series specification describes nine information technology classifications used to perform a variety of tasks in support of systems and services in the following six domains or closely related emerging information technology fields:

Business Technology Management - The management of information technology resources according to an organization's priorities and needs including activities such as information technology policy and program development, information technology portfolio management, information technology procurement, service performance management, process reengineering, business analysis, research and development, strategic planning, digital service user experience engagement, content design, and product and delivery strategy.

Client Services - The full lifecycle of end user device solutions including evaluation, configuration, provisioning, training, security, tracking, and support for an end user computing environment.

Information Security Engineering - The security aspects of the initiation, design, development, testing, operation, and defense of information technology data and environments to address sources of disruption, ranging from natural disasters to malicious acts.

Information Technology Project Management - The management or oversight of all phases of the project management and system development life cycles to ensure efficient and effective delivery of a unique information technology product, service, or system.

Software Engineering - The architecture, development, operation, and maintenance of software systems including user research, user centric design, development or configuration, programming, enterprise architecture, service-oriented architecture, testing, and implementation of the business application services.

System Engineering - The architecture, design, configuration, operation and maintenance of systems discovery and planning, design, configure, administer, and sustaining the operation of a defined system. System elements can include network, server, storage, operating system, database, program, hardware, and software.

DESCRIPTION OF SERIES

Allocations to this classification series may incorporate duties from one or more domains of information technology work.

Information Technology Technician
Under initial close supervision, incumbents typically perform routine support tasks within a limited scope typically involving one unit, function or process, following well-defined procedures in the Business Technology Management, Client Services, or Software Engineering domains.

Incumbents may install or repair hardware or peripheral equipment; manage user accounts and technology inventory; resolve client incidents or requests; ensure software/hardware compliance with security policies; create, test, maintain, and deploy desktop products; configure and/or modify software programs; perform data import and export activities; monitor information technology systems to ensure integrity and tune the system to meet performance requirements; troubleshoot routine issues; and other related activities.

Information Technology Associate
Under general supervision, incumbents typically perform a variety of recurring, well-defined tasks requiring occasional innovative problem-solving within guidelines and a scope that may encompass one or more units, functions or processes in the Business Technology Management, Client Services, or Software Engineering domains.

Incumbents may execute guidelines for technology governance and process improvement; track, monitor, and audit information technology assets; analyze, develop and document business processes; formulate, deliver, and coordinate end user training; resolve client incidents or requests; install, configure, maintain, and troubleshoot applications; research and analyze new client technologies; develop and update controls to ensure availability of systems and databases; maintain software product documentation; design, develop, and implement software that adheres to organizational enterprise requirements; create, enhance, and maintain information technology software solutions; gather, document, and review system requirements and specifications; and test, debug, and evaluate software systems functionality.

Information Technology Specialist I
Under direction, incumbents may perform a wide variety of tasks requiring regular innovative problem-solving within broadly stated and non-specific guidelines. The scope typically includes multiple program areas, and involves planning, developing, and implementing technological solutions that are essential to the missions of the overall organization, or affecting large numbers of people on a long-term or continuous basis in one or more of the Business Technology Management, Client Services, Information Security Engineering, Information Technology Project Management, Software Engineering, or System Engineering domains.

Incumbents may: perform feasibility studies and research analysis related to technology projects; provide information technology consultation in support of business programs; establish inventory management guidelines; provide metrics on service level agreements; install or repair hardware or peripheral equipment; develop, implement, and maintain security and privacy training; investigate security incidents; develop and/or review data sharing agreements prior to release of confidential information; analyze business impact and exposure based on emerging security threats; monitor project milestones and deliverables; coordinate and consult with users, administrators, and engineers to identify business and technical requirements; develop and sustain cooperative working relationships with project stakeholders; perform software product

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deployment and release management activities; define and design software solutions; identify infrastructure system requirements and recommend technology, hardware, software, and plans installation; advise, create, or participate in the design of new system architecture, standards, and methods to support organizational needs; install, configure, administer, test, and maintain communication infrastructure systems; conduct research and perform analysis to recommend system upgrades, cost-effective solutions, and process improvements; troubleshoot, track, and conduct root cause analysis of system/database/operational issues; and act in a lead role over lower-level staff.

Information Technology Specialist II
Under general direction, incumbents demonstrate a depth of leadership and expertise in one or more domains. Incumbents perform a wide variety of tasks requiring innovative problem-solving where guidance is not readily available. Incumbents optimize and apply architecture solutions for the benefit of the overall organization and play a major role in advising management or formulating information technology strategy and policy within the organization. Incumbents typically work in the Software Engineering, Information Security Engineering, Information Technology Project Management, or System Engineering domains.

Incumbents may: develop and ensure security solutions and technical artifacts are in place throughout all information technology systems and platforms; monitor and assess security controls, conduct security impact analyses, and report system security statuses; perform risk assessments and recommend information technology solutions; analyze incident-related data and determine the appropriate response; design new technologies, architectures, and solutions that will support security requirements; develop implementation plans including cost-benefit or return on investment analyses; design infrastructure configuration and change management standards or requirements; develop or update project plans for information technology projects; lead and mentor project teams; manage integration of information systems and/or subsystems; manage project(s) to ensure adherence to budget, schedule, and scope; review software architecture and make recommendations regarding technical and operational feasibility; plan, design, and implement the enterprise data models using standardized modeling tools to align technology solutions with business strategies; perform configuration management and release management for system components; verify stability, interoperability, portability, security, or scalability of system architecture; create backup and recovery strategies; conduct disaster and recovery analysis, planning, implementation, and administration for systems; and monitor and conduct audits of system capacity, performance, and traffic analysis.

Information Technology Specialist III
This is the expert advisor level. Under administrative direction, incumbents demonstrate strategic technical leadership, influence, and expertise that drive the organization's use of technology toward constant improvements. Incumbents represent the highest level of expertise available in state service within the Software Engineering, Information Security Engineering, Information Technology Project Management, or System Engineering domains. Incumbents develop the enterprise information technology architecture direction of the organization and advise management and executive level staff on governance and policy that support forward movement. Incumbents may have extensive decision-making authority and direct the most critical/complex projects where the consequence of error may have a serious detrimental effect on the operating efficiency of the organization.

Incumbents may: develop policies and procedures; develop multi-departmental systems; plan, develop, and document policies, requirements, and methodologies; enforce compliance with policies and requirements, and make recommendations; implement security and privacy

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controls across multiple information technology disciplines; direct or coordinate duties and responsibilities to project personnel; negotiate with project stakeholders or suppliers; conduct presentations or briefings to executive management; guide the development and elaboration of plans and artifacts; provide leadership, guidance, training, and support to project team members; determine the objectives and measures upon which the project will be evaluated; develop and analyze performance and capacity reports; develop and modify technical specifications; develop and implement standards and controls; contribute in the planning of the overall organizational information technology strategy; design, implement, and maintain system architecture across multiple platforms; and coordinate infrastructure system design, modification, upgrade, and implementation.

Information Technology Supervisor I
This is the working supervisory level. Under direction, incumbents plan, assign, and review the work of an information technology program or unit and personally perform the most difficult or sensitive work. This level may supervise lower level information technology and support staff.

Information Technology Supervisor II
This is the full supervisory level. Under general direction, incumbents plan, organize, and direct the work of one or more information technology programs or units, and may occasionally perform the most difficult or sensitive work. This level directly or indirectly supervises all lower level information technology and support staff performing work in any domain or combination of domains. At this level, incumbents may also: identify, document, and monitor defined service levels and performance management standards; manage contracts; ensure compliance to project management standards; develop scope of work; and participate in vendor/product solution evaluation and selection.

Information Technology Manager I
This is the managerial level. Under general direction, incumbents have significant responsibilities for formulating or administering organizational information technology policies and programs and for planning, organizing and directing the work of one or more information technology programs or units, typically through subordinate supervisors. This level may manage the work of lower level information technology and support staff. Incumbents may manage work in any domain or combination of domains. Incumbents at a small or medium department may serve as the department's Chief Information Officer.

Information Technology Manager II
This is the managerial level. Under administrative direction, incumbents serve in an executive management role in setting or influencing organizational information technology policy; formulating long-range information technology programs and objectives; and reviewing implementation and conformance of information technology programs with organizational policies and objectives. Incumbents have responsibility for planning, organizing and directing the work of multiple information technology programs or units, typically through subordinate supervisors and/or managers. Incumbents in a large department may serve as the departments Chief Information Officer.

MINIMUM QUALIFICATIONS

All classifications
When using education to meet the general experience requirements listed in the minimum qualifications, education must include the specified information technology or closely related

course work. Closely related course work refers to a course of study involving the study of computing, such as software engineering, computer engineering, Management Information Systems, Geographic Information System, and computing technology.

Information Technology Technician
Six months of general information technology experience performing technical or support tasks for computer systems or services in any of the six domains or emerging information technology fields; **or**

15 semester units (or 22.5 quarter units) from an accredited college or university including at least 6 semester units (or 9 quarter units) of information technology or closely related course work; **or**

Any equivalent combination of experience and education.

When using education to meet minimum qualifications, education must include the specified information technology or closely related course work.

Information Technology Associate
Eighteen months as an Information Technology Technician; **or**

Two years of general information technology experience performing technical, analytical, or support tasks for computer systems or services in any of the six domains or emerging information technology fields; **or**

60 semester units (or 90 quarter units) from an accredited college or university including at least 15 semester units (or 22.5 quarter units) of information technology or closely related course work; **or**

Any equivalent combination of experience and education.

When using education to meet minimum qualifications, education must include the specified information technology or closely related course work.

Information Technology Specialist I
Two years as an Information Technology Associate; **or**

Four years of general information technology experience performing technical and/or analytical tasks for computer systems or services in any of the six domains or emerging information technology fields; **or**

120 semester units (or 180 quarter units) from an accredited college or university including at least 15 semester units (or 22.5 quarter units) of information technology or closely related course work; **or**

Any equivalent combination of experience and education.

When using education to meet minimum qualifications, education must include the specified IT or closely related course work.

Information Technology Specialist II
One year as an Information Technology Specialist I; **or**

Five years of information technology experience, one year of which shall include experience in a lead or expert capacity performing a variety of progressively responsible technical or analytical tasks for computer systems or services in one or more of the major six domains or a closely related or emerging information technology field.

A bachelor's or higher degree from an accredited college or university may substitute for four years of the required general information technology experience. An associate's degree from an accredited college may substitute for two years of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

Information Technology Specialist III
One year of experience as an Information Technology Specialist II; **or**

Six years of information technology experience, two years of which shall include performance of highly specialized work in a lead or expert capacity on highly complex or specialized information technology systems or services in one or more of the major six domains or a closely related or emerging information technology field.

A master's or doctorate degree from an accredited college or university may substitute for four years of the required general information technology experience. A bachelor's degree from an accredited college or university may substitute for three years of the required general information technology experience. An associate's degree from an accredited college may substitute for one year of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

Information Technology Supervisor I
Two years of experience as an Information Technology Associate; **or**

Four years of information technology experience, one year of which shall include experience in a lead or supervisory capacity, performing a variety of progressively responsible technical and/or analytical tasks for computer systems or services in one or more of the major six domains or a closely related or emerging information technology field.

A bachelor's or higher degree from an accredited college or university may substitute for three years of the required general information technology experience. An associate's degree from an accredited college may substitute for one and a half years of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

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Information Technology Supervisor II
Two years of experience as an Information Technology Specialist I; or

One year of experience as an Information Technology Supervisor I; or

Five years of information technology experience, two years of which shall include experience in a lead or supervisory capacity performing a variety of progressively responsible technical, analytical and/or supervisory tasks for computer systems or services in one or more of the major six domains or a closely related or emerging information technology field.

A bachelor's or higher degree from an accredited college or university may substitute for three years of the required general information technology experience. An associate's degree from an accredited college may substitute for one and a half years of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

Information Technology Manager I
Two years of experience as an Information Technology Supervisor I; **or**

One year of experience as an Information Technology Supervisor II; **or**

Six years of information technology experience performing a variety of progressively responsible technical, analytical, or supervisory tasks in support of computer systems or services in one or more of the major six domains or a closely related or emerging IT field. At least two years of experience shall include performance of highly specialized work in a lead capacity on highly complex or specialized information technology systems or services, or in a progressively responsible supervisory capacity over highly complex or specialized information technology systems or services.

A master's or doctorate degree from an accredited college or university may substitute for four years of the required general information technology experience. A bachelor's degree from an accredited college or university may substitute for three years of the required general information technology experience. An associate's degree from an accredited college may substitute for one year of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

Information Technology Manager II
One year of experience as an Information Technology Manager I; **or**

Seven years of information technology experience performing a variety of progressively responsible technical, analytical, supervisory, or managerial tasks in support of computer systems or services in one or more of the major six domains or a closely related or emerging information technology field. At least three years of experience shall include performance of highly specialized work in a lead capacity on highly complex or specialized information technology systems or services, or in a progressively responsible supervisory or managerial capacity over highly complex or specialized information technology systems or services.

A master's or doctorate degree from an accredited college or university may substitute for four years of the required general information technology experience. A bachelor's degree from an accredited college or university may substitute for three years of the required general information technology experience. An associate degree from an accredited college may substitute for one year of the required general information technology experience. Only one degree may be used for substitution.

When using education to meet minimum qualifications, education must include 15 semester units (or 22.5 quarter units) of information technology or closely related course work.

KNOWLEDGE AND ABILITIES

Information Technology Technician
Knowledge of: Information technology concepts, practices, and principles to provide a foundation for technology related work.

Ability to: Perform research and data gathering; analyze information and evaluate results to choose the best solution and solve problems; communicate effectively verbally and in writing as appropriate for the needs of the audience; utilize reporting tools to develop and analyze statistical reports; interpret and explain technical information to non-technical individuals; interpret customer requests to meet service needs and resolve problems; provide customer service; work cooperatively with staff at all levels; proficiently use computers and productivity software; and understand and align technology proposals with business needs.

Information Technology Associate
All knowledge and abilities of the Information Technology Technician classification; and

Knowledge of: Principles, techniques, and procedures related to the delivery of information technology services; the System Development Lifecycle including the associated methodologies, tools, and processes; the organization's business processes and procedures; education tools and techniques; performance monitoring tools and techniques; and data administration techniques and best practices.

Ability to: Use initiative; act independently with flexibility and tact; use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems; perform technical analysis of proposed technology solutions; comprehend technical documents to interpret specifications, system implementations, capabilities, interdependencies, and compatibilities; serve as a technical liaison; develop and effectively utilize all available resources; develop end-user training materials; and gather data to perform statistical analysis and report outcomes.

Information Technology Specialist I
All knowledge and abilities of the Information Technology Associate classification; and

Knowledge of: Information technology governance principles and guidelines to support decision making; complex and mission critical business processes and systems; principles, methods and procedures for designing, developing, optimizing, and integrating systems in accordance with best practices; system specifications design, documentation, and implementation methodologies and techniques.

Ability to: Formulate and recommend policies and procedures; perform effectively in a fast-paced environment with constantly changing priorities; establish and maintain project priorities; apply federal, state, department, and organizational policies and procedures to state information technology operations; apply systems life cycle management concepts used to plan, develop, implement, operate, and maintain information systems; positively influence others to achieve results that are in the best interests of the organization; consider the business implications of the technology to the current and future business environment; communicate change impacts and change activities through various methods; conduct end-user training; collaborate closely with technical subject matter experts such as database administrators, network engineers, and server administrators to ensure systems are secure and meet compliance requirements; assess situation to determine the importance, urgency, and risks to the project and the organization; make decisions which are timely and in the best interests of the organization; provide quality and timely ad hoc project information to executives, project team members, and stakeholders; develop decision making documents; and assess and understand complex business processes and customer requirements to ensure new technologies, architectures, and security products will meet their needs.

Information Technology Specialist II
All knowledge and abilities of the Information Technology Specialist I classification; and

Knowledge of: Emerging technologies and their applications to business processes; business or systems process analysis, design, testing, and implementation techniques; techniques for assessing skills and education needs to support training, planning and development; business continuity and technology recovery principles and processes; principles and practices related to the design and implementation of information technology systems; information technology systems and data auditing; the department's security and risk management policies, requirements, and acceptable level of risk; application and implementation of information systems to meet organizational requirements; project management lifecycle including the State of California project management standards, methodologies, tools, and processes; software quality assurance and quality control principles, methods, tools, and techniques; research and information technology best practice methods and processes to identify current and emerging trends in technology and risk management processes; and state and federal privacy laws, policies, and standards.

Ability to: Recognize and apply technology trends and industry best practices; assess training needs related to the application of technology; interpret audit findings and results; implement information assurance principles and organizational requirements to protect confidentiality, integrity, availability, authenticity, and non-repudiation of information and data; apply principles and methods for planning or managing the implementation, update, or integration of information systems components; apply the principles, methods, techniques, and tools for developing scheduling, coordinating, and managing projects and resources, including integration, scope, time, cost, quality, human resources, communications, and risk and procurement management; monitor and evaluate the effectiveness of the applied change management activities; keep informed on technology trends and industry best practices and recommend appropriate solutions; foster a team environment through leadership and conflict management; effectively negotiate with project stakeholders, suppliers, or sponsors to achieve project objectives; and analyze the effectiveness of the backup and recovery of data, programs, and services.

Information Technology Specialist III
All knowledge and abilities of the Information Technology Specialist II classification; and

Knowledge of: Development and application of technology in the current and future business environment; emerging technologies and their applications to business processes; policy development; and applications and implementation of information systems to meet organizational requirements.

Ability to: Research and identify best practice methods and processes to identify current and emerging trends in technology and recommend appropriate courses of action.

Information Technology Supervisor I
All knowledge and abilities of the Information Technology Associate classification; and

Knowledge of: The principles of personnel management, supervision, and training; the organization's mission, policies, principles and practices; business and management principles involved in strategic planning, resource allocation, leadership technique, coordination of people and resources; principles and practices of organization, administration, personnel (recruitment, selection, training, compensation, benefits, labor relations, negotiation, and personnel information systems), and budget management; organizational roles and responsibilities and the ability to tailor training appropriately; principles and practices of employee supervision, development, and training; a supervisor's responsibility for promoting equal opportunity in hiring and employee development and promotion; maintaining a work environment which is free of discrimination and harassment; principles of personnel management, supervision, and training; the department's Equal Employment Opportunity objectives; and a supervisor's role in Equal Employment Opportunity and the processes available to meet equal employment objectives.

Ability to: Supervise technical personnel; plan, administer, and monitor expenditures; assess, analyze, and identify information technology policy needs; establish cooperative relationships and gain support of key individuals to accomplish goals; plan, coordinate, and direct the activities of multi-disciplinary staff; effectively promote equal opportunity in employment and maintain a work environment that is free of discrimination and harassment; and effectively contribute to the department's Equal Employment Opportunity objectives.

Information Technology Supervisor II
All knowledge and abilities of the Information Technology Supervisor I and Information Technology Specialist I classifications.

Information Technology Manager I
All knowledge and abilities of the Information Technology Specialist II and Information Technology Supervisor II classifications; and

Knowledge of: A manager's responsibility for promoting equal opportunity in hiring and employee development and promotion and maintaining a work environment which is free of discrimination and harassment; the department's Equal Employment Opportunity objectives; and a manager's role in Equal Employment Opportunity and the processes available to meet equal employment objectives.

Information Technology Manager II
All knowledge and abilities for all Information Technology classifications; and

Ability to: Manage through subordinate supervisors; effectively promote equal opportunity in employment and maintain a work environment that is free of discrimination and harassment; and effectively contribute to the department's Equal Employment Opportunity objectives.

PREFERRED OR DESIRABLE QUALIFICATIONS

For specific positions, departments may specify knowledge, experience, or specific training in one or more of the six identified domains.

All employees must have general qualifications as described by <u>California Code of Regulations, title 2, section 172.</u>

CLASS HISTORY

Class Title	Date Established	Date Revised	Date Abolished	Title Changed
Information Technology Technician	1/11/18			
Information Technology Associate	1/11/18			
Information Technology Specialist I	1/11/18			
Information Technology Specialist II	1/11/18			
Information Technology Specialist III	1/11/18			
Information Technology Supervisor I	1/11/18			
Information Technology Supervisor II	1/11/18			
Information Technology Manager I	1/11/18			
Information Technology Manager II	1/11/18			