



## Software Engineering Career Family LEVEL DESCRIPTIONS

### PURPOSE

Jobs in this family perform software engineering work that is focused on interfacing with clients, vendors and other technologists to discover and identify business and technical requirements, determining the most efficient and cost-effective solution, and translating requirements into well-engineered, tested and deployed business application systems. This is accomplished through coordination of business process analysis and design; alignment of technology to agency program needs; and defining solutions that utilize a variety of hardware and software technologies and may include new code construction, modifications to existing systems, and/or commercial-off-the-shelf implementations. The jobs in this family are also responsible for helping to develop and advance a long-range vision of how IT will support government; and analyzing, designing, programming, testing, installing and maintaining the resulting information systems to include IT portfolio management, IT development architecture/standards/policy creation, quality assurance, business security/risk management, business continuity and project management.





# Software Engineering Career Family

## LEVEL 1 DESCRIPTION - Professional Track

Class Code: 805001 Software Engineer I

# P1

### Summary

Performs software engineering work that requires module-level application development methods and techniques following established procedures and/or detailed specifications. Employees in this role typically have programming skills in one or two technologies and perform assignments of specific tasks that are limited in scope, depth, duration, and degree of skill required. To be successful in this role, employees seek guidance and advice from more experienced colleagues and are focused on gaining the knowledge and experience to perform more independently and participate in work of higher complexity.

### Nature of Work

- Performs, with direction, standard software engineering activities that develop professional skills/knowledge, provide familiarization with the software engineering staff, methods, practices, and projects.
- Works with more experienced colleagues to learn procedures, and to gain technical competence in programming languages and tools.
- Codes singular (or stand alone) modules following detailed specifications to meet functional needs; tests to verify functionality.
- Supports application software by diagnosing functionality issues, fixing problems, and undertaking enhancements.
- Creates and/or updates module level documentation that is clear, concise, and adheres to standards.
- Attends and observes experienced colleagues in client working sessions to learn business analysis methods; applies learned knowledge and skills to assisting on analysis by undertaking information gathering and by eliciting the details of requirements in discussion with clients.
- Forms productive relationships with clients by listening, clarifying, and responding effectively.
- Gains an understanding of the clients and existing processes for a specific business area that interfaces with a particular technology application.
- Learns and applies relevant policies and procedures to comply with state standards.
- Gains an understanding of the State, agencies, and the business functions supported.
- Learns BIT's Technical Infrastructure.
- Learns existing systems and effectively supports and maintains functionality.

### Competencies

- **Attention to Detail:** Shows concern for all aspects of tasks.
- **Communication:** Clearly conveys information to others and checks for understanding.
- **Information Seeking:** Actively seeks, collects, and evaluates information.
- **Initiative:** Sets goals and puts forth the effort required to achieve them.
- **Problem Solving:** Recognizes and evaluates problems, and recommends sound solutions.
- **Teamwork:** Works cooperatively with coworkers and treats them with respect.

### Job Knowledge (typical education/experience preferred for entry into the level)

This is an entry-level position typically requiring a degree in software engineering or a related field. Employees will gain practical application of their academic education and/or previous software engineering related experience in a work environment that will serve as the foundation for further development.

### Career Development

This role provides the opportunity to gain software engineering experience, build competence, and begin a long-term career with the State. The State offers unique software engineering opportunities at this level that involve exposure to a variety of technologies and enterprise class tools, application of educational learning, mentoring from subject matter experts, and ownership of own career path and advancement.

To develop proficiently in this role, it will be important to demonstrate patience; progressively learn and apply technical

knowledge, techniques and concepts within a state government environment; seek out answers to questions; accept and learn from feedback; and effectively work in a team environment.

For movement to the next level, an employee will need to demonstrate quality and effectiveness of work responsibilities and the full range of supporting behaviors, an understanding of the “why” behind procedures and policies, sound judgment and can anticipate the next logical issue or problem, initiative and ability to take on more challenging responsibilities with greater independence, and desire to progress.



## Software Engineering Career Family LEVEL 2 DESCRIPTION - Professional Track Class Code: 805002 Software Engineer II

# P2

### Summary

Performs software engineering work of limited scope and complexity in accordance with multiple module-level specifications or within the framework of sub-systems or defined procedures, practices, and standards. This role is for a professional who has solid, fundamental understanding of requirement specification, design, coding, and testing of business application systems; the ability to learn and apply new and emerging concepts quickly; and the ability to solve most applications problems independently. To be successful in this role, employees seek guidance, training, and support from more experienced colleagues and outside sources.

### Nature of Work

- Learns and applies additional or advanced programming languages; applies professional and software engineering concepts to develop an understanding of differing and variable situations that will guide thinking on ways to address/approach those situations.
- Codes multiple, interrelated modules following specifications to meet functional needs; tests to verify functionality.
- Creates and/or updates interrelated module documentation that is clear, concise, and adheres to standards.
- Supports new and existing interrelated modules by diagnosing functionality issues and fixing problems.
- Learns and applies design methodologies; designs a sub-system to communicate a proposed solution; creates business rules and use cases.
- Performs sub-system maintenance activities, ensuring change requests and small enhancements are progressed.
- Participates in client working sessions to gain strong working knowledge of a specific business area, the processes used by the client to accomplish objectives, and the applications that support the processes; assists senior level colleagues in analyzing business processes and helping to define and document business requirements.
- Participates in systems design by defining some of the specification details at the module-level for applications and by contributing technical insights and ideas.
- Contributes to the development of overall project plan by identifying tasks and estimating time to accomplish tasks for sub-systems.
- Observes experienced project managers to learn software engineering project management skills and applies learned knowledge and skills to the administration of a phase or component of a project; prepares reports and other communications on task status to update project manager.
- Learns to build productive relationships with business area key stakeholders.
- Presents information in a way that optimizes client understanding and the utility of that information.

### Competencies

- **Communication:** Clearly conveys information to others and checks for understanding.
- **Information Seeking:** Actively seeks, collects, and evaluates information.
- **Initiative:** Sets goals and puts forth the effort required to achieve them.
- **Organization:** Plans ahead, sets priorities, and works in an orderly manner.
- **Problem Solving:** Recognizes and evaluates problems, and recommends sound solutions.
- **Teamwork:** Works cooperatively with coworkers and treats them with respect.

### Job Knowledge (typical education/experience preferred for entry into the level)

Typically requires a degree in software engineering or related field plus 1-2 years experience equivalent to a Level 2 in the Software Engineering Job Family; OR

Typically 1-2 years progressive experience from a Level 1 to a Level 2 to be fully proficient.

## Career Development

This role provides the opportunity to gain more in-depth and involved software engineering experience, including additional formal training, participation in project management, greater interaction with clients, and a sense of accomplishment by working on an assignment from start to finish. Opportunities at this level involve working more independently, exercising judgment and making well informed decisions.

To develop proficiently in this role, it will be important to progressively apply knowledge and skill in the development life cycle, work towards performing duties more independently and make decisions without consultation while maintaining an awareness of when one does not know the answer and thus seek guidance; enhance knowledge of the BIT technical architecture; and develop an effective communication style with clients.

For movement to the next level, an employee will need to perform responsibilities and assignments more independently, confidently, accurately, effectively, and timely; demonstrate the full range of supporting behaviors; successfully complete a development life cycle; have an understanding of how own work impacts the larger system; demonstrate an interest in expanding responsibilities by actively participating on larger projects or more complex work; has developed effective relationships with clients and has the trust and respect of clients and other colleagues; and the desire to progress.



## Software Engineering Career Family LEVEL 3 DESCRIPTION - Professional Track Class Code: 805003 Software Engineer III

# P3

### Summary

Performs software engineering work requiring solid understanding of the software development life cycle usually focusing on the design, installation, and maintenance of systems projects of moderate complexity, and/or, under general supervision, in elements of major or complex systems. Employees in this role serve as a technical resource or as a technical lead which requires independence in business analysis, application design, coordination on projects, and system maintenance activities; excellent analysis capability; and the ability to exercise sound technical judgment in making decisions. While employees in this role seek advice and guidance of more senior level colleagues on complicated issues or solutions, this role is for a well-grounded professional who has solid software engineering knowledge and who may start to specialize in a particular business area of defined scope, providing consultative systems guidance to the client area in the application of systems analysis to business problems.

### Nature of Work

- Codes at the system/application level to meet functional and business needs; performs technical review of code developed by peers and junior colleagues for completeness, quality and compliance with established standards; works with peers and junior colleagues to resolve issues.
- Develops test plans to verify functionality; creates and executes technical implementation plan to ensure consistency and integration with other technologies, performance and security.
- Creates and/or updates system-level documentation, serving as primary author; sets priorities and ensures regular review and maintenance of existing systems.
- Diagnoses and troubleshoots cross divisional system/application issues and proposes a solution.
- Designs comprehensive systems/applications and discovers business rules, use cases, and requirements.
- Understands changing business needs for the area supported and the subsequent impact on applications; advises clients on discrete business problems, formulates options including assessing relative merits and risks, and works with clients to determine the best solution.
- Performs business process analysis of a specific, defined business area to identify problem areas or opportunities for performance improvement; assists higher level colleagues on broader, more complex business process analysis; participates in the scoping of possible projects.
- Develops user-level and technical requirements specifications for new systems or changes to existing systems.
- Develops overall project plan for and leads the development process of projects utilizing 1 or 2 allocated colleagues as necessary to undertake detailed analysis and coding activities; participates as a senior team member on larger projects and/or serves as the technical lead for a sub-section of a larger project.
- Forms productive relationships with business area key stakeholders and the vendor community. Partners with vendors in software construction, analysis, and design; and monitors vendor compliance to standards.
- Provides technical guidance, trains, and may review the work of junior colleagues to ensure work quality, assess problems, generate alternative solutions, and to contribute to departmental performance goals.
- Undertakes additional specialized training or identifies and engages in continuing educational opportunities to maintain and expand level of knowledge.
- Learns and applies knowledge of multiple business areas, process integration, and optimization of the most efficient techniques; identifies and implements best practices to solve problems and address challenges more effectively.

### Competencies

- **Assertiveness:** Acts with confidence and completes work independently.
- **Composure:** Remains focused under pressure and controls emotions.
- **Creativity:** Generates and tests innovative ideas and solutions.
- **Decisiveness:** Exercises sound judgment and makes timely, well-informed decisions.
- **Developing Others:** Plans and supports the development of others.
- **Expertise:** Develops self to expand own knowledge, applies it, and shares with others.

## **Job Knowledge** (typical education/experience needed for entry into the level)

Typically requires a degree in software engineering or related field plus 1-2 years experience equivalent to a Level 3 in the Software Engineering Job Family; OR

Typically 3-4 years progressive experience from a Level 2 to a Level 3 to be fully proficient.

## **Career Development**

This role provides the opportunity to develop an overall plan and direct software engineering projects, gain beginning level experience in business process analysis, integrate applications to other technologies and clients' business environments, be exposed to a larger part of the client organization, have greater independence in decision making, and serve as a technical resource to others. Opportunities at this level involve the ability to display technical leadership, particularly in influencing the design of systems; providing expertise and assistance in setting direction in technical committees; and through technical direction, guidance and mentorship of junior level colleagues.

To develop proficiently in this role, it will be important to gain progressive knowledge and ability in project management, including interpersonal understanding of stakeholders and others involved and apply this understanding to communications, interactions, and in the discovery of issues/problem; and creation of buy-in, accurate planning, and anticipation of problems and/or opportunities. It will also be important to change one's mind set and activities from performing tasks to providing consultative guidance to others; develop creative/effective communication for delivering potentially negative or upsetting news in a positive way; and accept that the work performed involves other colleagues and one can not control every aspect of an application or system.

For movement to the next level, an employee will need to have performed responsibilities and assignments independently, confidently, accurately, effectively, and timely; demonstrate the full range of supporting behaviors; actively seeks out opportunities and accepts responsibilities that are beyond one's comfort zone and in which there are inherent problems at the outset; demonstrate conceptual thinking and has the ability to see the broader linkages and impacts of work; consistently leads teams that work well together and produce high quality work products; has solid knowledge of a business area and the multiple technologies that support that area; has developed effective relationships with clients and has the trust and respect of clients and other colleagues; and the desire to progress.



## Software Engineering Career Family

### LEVEL 4 DESCRIPTION - Professional Track

Class Code: 805004 Software Engineer IV

# P4

#### Summary

Performs advanced software engineering work within complex assignments usually representing the development and implementation of large systems projects or of broad scope and specialized complexity requiring the coordination and integration of cross functional resources. Employees in this role are usually regarded as a specialized expert and a leader in the design and execution of business solutions for an assigned agency or perform work that requires broad understanding of applications, technical architectures, and the cross impacts of work on other business and BIT areas. Work at this level requires an ability to provide technical guidance to others, assess the feasibility and soundness of proposed solutions; evaluate new technologies and/or re-conceptualize fundamental assumptions in current processes, systems, procedures, etc., to develop more effective, efficient, and cost effective approaches to address business issues; and influence future IT and/or business strategy.

#### Nature of Work

- Serves as a technical expert to colleagues, management, and stakeholders and key technical advisor to project teams. Provides specialized consultative advice, insights, implications, and recommendations for higher-level decisions; partners with other BIT areas to design an internal IT solution.
- Serves as the primary lead and expert for an agency-wide system/application or technology; serves as a technical team lead for multiple changes to applications or applications with multiple integration points.
- Codes the most complex portion of a system/application to meet functional and business needs; develops test plans to verify functionality; creates and executes technical implementation plan to ensure consistency and integration with other technologies performance and security; creates and/or updates system-level documentation, serving as primary author; sets priorities and ensures regular review and maintenance of existing systems.
- Participates in code reviews and sets standards for coding practices to improve quality and maintainability.
- Designs large, high risk, high visibility systems/applications; creates business rules, use cases, and requirements; reviews designs prepared by junior colleagues to ensure feasibility and soundness.
- Develops software architecture for an agency; assesses agency requests and any other changes to the way of business, and the resulting impact on IT; consults with clients on broader economic impact of proposed solutions, working with clients and BIT colleagues to design an inter-related technology solution that optimizes business success while balancing cost.
- Performs business process analysis of an agency; develops an in-depth understanding of agency's business function; leads client working sessions and coordinates with multiple stakeholders in scoping possible projects; designs projects with broad implication for the business and/or future architecture, successfully addressing cross technology and cross platform issues.
- Develops overall project plan for and leads the development process of large, high risk, high visibility projects or projects involving new technology where the number of variables is unknown utilizing multiple allocated colleagues who collectively represent a diverse, cross function team; coordinates project activities with other business or BIT areas to facilitate participation of appropriate staff in project completion.
- Strengthens productive networks with key agency stakeholders and the vendor community. Manages vendor and IT coordination, and monitors vendor compliance to standards.
- Evaluates applicability of new technologies; utilizes evaluation to influence future IT and/or business strategy; brings technical and/or business systems knowledge from external sources and incorporates ideas into approaches.
- Participates in client relationship management of an agency.
- Provides technical guidance, training, direction, and reviews the work of junior colleagues and project members to ensure quality and achievement of timelines. May provide input into performance reviews.

#### Competencies

- **Creativity:** Generates and tests innovative ideas and solutions.
- **Customer Service:** Treats customers courteously and ensures their needs are met.
- **Expertise:** Develops self to expand own knowledge, applies it, and shares with others.
- **Influence:** Gains acceptance or support for ideas, projects, and solutions.
- **Organizational Awareness:** Acts with an understanding of organizational realities.
- **Relationship Building:** Builds, maintains, and strengthens relationships with others who can provide support.

**Job Knowledge** (typical education/experience preferred for entry into the level)

Typically requires a degree in software engineering or related field plus 8-12 years of progressive software engineering experience; OR

Typically 4-7 years progressive experience from a Level 3 to a Level 4 to be fully proficient.

**Career Development**

This role provides the opportunity to develop an overall plan and direct software engineering projects; serve as the key advisor to an agency and have primary responsibility for supporting agency level needs; impact important software engineering decisions; and rate and evaluate vendor applications. Opportunities at this level involve project management of large, high risk, high visibility projects; significant vendor interaction and collaboration with internal colleagues and clients; and impact on the future IT and/or business strategy.

To develop proficiently in this role, it will be important to enhance knowledge and ability in project management, including interpersonal understanding of stakeholders and others involved and apply this understanding to communications, interactions, and in the discovery of issues/problem; and creation of buy-in, accurate planning, and anticipation of problems and/or opportunities. It will also be important to increase skills in resource and time management; build consensus within BIT; find ways to effectively guide an agency through a software engineering initiative; understand the impact one can have on others or the process to ensure communications are well researched and appropriate.

For movement to the next level, an employee will need to have performed responsibilities and assignments independently, confidently, accurately, effectively, and timely; demonstrate the full range of supporting behaviors; demonstrate working knowledge of all of state government; be actively sought out as a trusted advisor and for technical leadership or participation on cross-functional teams; selected to lead committees that are governed to identify standards or select new technologies; have shown successful performance of high visibility work; demonstrate creativity with proposed solutions; taken initiative in developing the technical capabilities of junior colleagues and peers.



## Software Engineering Career Family LEVEL 5 DESCRIPTION - Professional Track Class Code: 805005 Software Engineer V

# P5

### Summary

Performs software engineering work at the highest systems level either as a deep consultative expert in software engineering or a technical project leader requiring deep technical knowledge in at least one technology and proficient in all relevant technologies. Employees in this role act as an authority and are regarded as a statewide expert, providing technical advice and counsel to client management and IT project teams in the design and maintenance of major systems of the most complex nature, usually involving large, independent systems, new technologies, and broad implications for the IT architecture, or in planning and directing of applications systems projects that involve multiple systems and impact more than one agency. Work at this level involves the need to play a leadership role in strategic technology planning; ability to develop highly sophisticated technology plans that require the integration of multiple technologies and the interrelationships of multiple systems serving diverse clients; and ability to raise the bar of software engineering knowledge that exists by ensuring leading expertise is maintained and enhanced in the State.

### Nature of Work

- Provides a broad cross-agency perspective on the applications architecture and environment, in order to propose solutions that are optimal for the entire State, considering costs, benefits, impacts on BIT, and trade-offs between various client areas.
- Maintains an understanding of statewide business strategies and factors them into business and technology planning; identifies and assesses innovative ways of looking at the State and applications and technical architectures that can have significant long-term impact on the way of work, such as significantly enhancing service quality and reducing costs.
- Leads efforts to develop, modify, and implement internal applications development standards, policies, and procedures; creates common components that would be used across multiple development teams.
- Investigates the most technically complex software problems or technical problems that may have never been encountered previously in BIT or South Dakota State Government and coordinates problem resolution with vendors, hardware manufacturers, and/or appropriate internal IT technologists.
- Develops the most complicated design specifications and provides consultative guidance to project teams on the execution.
- Researches and evaluates future trends in applications technologies and provides technical leadership to strategic applications architecture planning.
- Acts as a key technical advisor to project teams working on systems/applications of the most complex nature (typically crossing functional/agency lines), providing unique insights, new research and novel approaches; ensures applications/systems fully meet customer needs and all variables have been considered.
- Reviews the work performed across teams to identify commonalities and possible integration; shares learned best practices with others; leads teams to create best practices.
- Develops overall project plan for and leads the development process of statewide, high risk, high visibility projects or projects involving new technology where the number of variables is unknown and there are multiple access points; utilizes multiple allocated colleagues who collectively represent a diverse, cross function team; coordinates the input, support, and communication with all agencies that impact project scope, business value, risk, and resource requirements; manages any vendors necessary to complete projects.
- Prepares and develops presentations to all levels of management, often to convince senior management to adopt a certain strategy, invest in a technology, etc.
- Leads the development of effective networks of clients, suppliers, the technical community, and consultants.
- Provides recommendations for investment in new products and technology solutions, supported by appropriate ROI, total cost of ownership, and/or cost benefit analyses.
- Influences others to change their approach and work collectively to implement new or difficult changes; coordinates and integrates efforts of all relevant business areas, facilitates collective efforts, and helps to resolve collaboration issues.
- Mentors and reviews the work of others engaged in complex software engineering.

### Competencies

- **Communication:** Clearly conveys information to others and checks for understanding.
- **Creativity:** Generates and tests innovative ideas and solutions.
- **Customer Service:** Treats customers courteously and ensures their needs are met.
- **Developing Others:** plans and supports the development of others.
- **Expertise:** Develops self to expand own knowledge, applies it, and shares with others.

- **Influence:** Gains acceptance or support for ideas, projects, and solutions.

### **Job Knowledge** (typical education/experience preferred for entry into the level)

Typically requires a degree in software engineering or related field plus 12 or more years of progressive software engineering experience.

### **Career Development**

This role provides the opportunity to develop an overall plan and direct high risk, high visibility software engineering projects that have cross-agency or statewide impact; serve as a statewide expert and technical advisor, including exploration of new technologies, standards, and practices; set trends and develop policies that could affect information technology support throughout the State of South Dakota; significant interaction with senior management and the ability to influence key decisions.

To develop proficiency in this role, it will be important to build and strengthen relationships within BIT and externally across the State and the industry; develop strategies or approaches for facilitating the collaboration of agencies and BIT areas; have continued focus and identify ways to grow and broaden technical and organizational knowledge, including researching and maintaining knowledge of the latest technologies; accept and be mindful of the risk and responsibility associated with being an expert, including accepting responsibility for recommendations that could have significant cost and benefit implications across the state; create challenges for self and BIT to ensure improvement in efficiencies and support of state business requirements; and communicate effectively in order to inform, educate, and influence.



**Software Engineering Career Family**  
**LEVEL 1 DESCRIPTION - Managerial Track**  
**Class Code: 805111 Exempt Software Engineer Manager I**

**PM1**

**Summary**

Coordinates work responsibilities and leads a team(s) comprised of software engineering staff. Employees in this role provide day-to-day supervision or work direction to a team that carries out module-level to moderately complex system/application activities and projects. Work at this level requires thorough knowledge of the State's business areas, services, and work processes, with special expertise in the systems and work processes of any client area directly supported by the team; the ability to address team and complex software engineering issues; and the authority to make short-term operational decisions. Gaining people management skills and abilities is a major responsibility and focus of this role.

**Nature of Work**

- Aligns work with management goals and objectives and accordingly establishes goals and expectations for team members.
- Recommends resources and budgetary requirements for annual planning purposes; may write justifications for resources.
- Creates a positive work environment that maximizes the strengths of members and focuses on individual and team developmental areas in order to increase the capability of staff and to ensure work quality; identifies training needs and works to ensure training is made available to staff.
- Reviews work and monitors progress and performance of activities and projects, provides guidance and coaching, and motivates on an individual and team level to ensure completeness and soundness of work and achievement of goals.
- Assists in recruitment, interviewing and hiring; provides new employee orientation; provides input on personnel actions such as performance reviews and discipline to ensure competent staff.
- Acts as a technical reference and advisor for the team, other colleagues, key stakeholders and vendors; maintains up-to-date knowledge of software engineering concepts and approaches; may research and evaluate the applicability of new technologies.
- Identifies and recommends improvements to work procedures and processes; resolves technical disputes between team members.
- Manages or directs the management of projects; integrates resources effectively; formulates project plans, establishes critical path, coordinates vendors, tracks project progress; and may be actively involved in the execution of the technically complex aspects of assigned projects.
- Serves as client relationship manager; communicates with project sponsor(s) to monitor and facilitate satisfaction; ensures consistent and quality communication occurs between the project leader and client.
- Participates in client portfolio management process; maintains knowledge of the clients business, including current and future needs; understands the business impact of different solutions and can assess the tradeoffs between business needs, technology requirements, and costs.
- Performs the same activities of team; assigns work and projects (in collaboration with management); plans, directs, and utilizes available resources; evaluates and reviews code, documentation, and technical requirement specifications prepared by staff.
- Collaborates and communicates with other teams and BIT employees to obtain information and needed resources.
- Identifies more effective and cost efficient approaches for delivering service that may include changes in technology, structure, roles, and/or processes.
- Educates staff on new technologies or changes within BIT and communicates critical information to ensure compliance and advancements in methods and techniques.

**Competencies**

- |                                   |                               |
|-----------------------------------|-------------------------------|
| ▪ Displays Integrity & Commitment | ▪ Exercises Due Diligence     |
| ▪ Acts Decisively                 | ▪ Focuses on Customer Needs   |
| ▪ Builds Strong Alliances         | ▪ Achieves Successful Results |
| ▪ Demonstrates Astuteness         | ▪ Communicates Powerfully     |
| ▪ Builds Competence               | ▪ Develops Successful Teams   |

**Job Knowledge** (typical education/experience preferred for entry into the level)

Typically requires a degree in software engineering or related field plus 8 or more years of progressive software engineering

experience including evidence of people skills and abilities.

## Career Development

This role provides the opportunity to begin a leadership career with the State through delegated authority to lead a team, to provide direction, to motivate, to mentor, and to impact team performance. Opportunities at this level involve impact on team and technical procedures and process; more in-depth and regular interactions with higher level management, including participation in management decision making; increased client contact; exposure to budget and resource management; and the development or direct the development and management of software engineering projects.

To develop proficiently in this role, it will be important to shift focus from performing individual contributor work the majority of the time to a more balanced focus on leading a team and engaging in the work performed by team members. It will also be important to seek answers, guidance, and training to address one's gap in knowledge and abilities regarding the nuances of this role, including interpersonal skills in leading a team of diverse personalities and abilities, personnel rules and regulations, resource management, budget management, and decision making authority; accept responsibility for taking action and making decisions that are right for the business even though that may affect personal relationships; develop strategies or approaches for conflict resolution; and strengthen relationships within BIT and with clients.



**Software Engineering Career Family**  
**LEVEL 2 DESCRIPTION - Managerial Track**  
**Class Code: 805112 Exempt Software Engineer Manager II**

**PM2**

### Summary

Directs large teams of software engineers with diverse skill sets or manages and administers the development and maintenance of applications systems for assigned functional areas or agencies. This role is the first level of supervision where the employee has both technical and full administrative responsibility for staff. Employees in this role have both functional and administrative responsibility for the execution and success of multiple activities and projects, including systems analysis, applications software, and programming, for varied complex types of applications systems and where coordination across teams is required. Work at this level requires thorough and broad knowledge of the areas managed, including related BIT and clients technical issues and requirements; ability to address broad operational issues; and the authority to make annual operational decisions within the context of longer-term planning.

### Nature of Work

- Understands and clearly articulates software engineering goals for assigned area as context for tactical operational planning; participates in the development of the larger BIT vision and provides input in the strategic planning process.
- Instills a sense of vision and direction in teams and creates a positive work environment that leverages the strengths of members and focuses on individual, team, and BIT software engineering-wide developmental areas in order to increase the capabilities and ensure success of the development and maintenance of systems.
- Establishes a culture of innovation, encouraging and rewarding new approaches that improve efficiencies, effectiveness, quality, and service value; identifies and implements more effective and cost efficient approaches for delivering service, that may include changes in technology, roles, and/or processes; continually improves work procedures and processes for area(s) managed to strike the optimal balance between performance, customer services, and cost management.
- Maintains broad understanding of software engineering and strong knowledge of architectures and strategies across BIT, participating as a leader in their development.
- Serves as primary client relationship manager and maintains recognition as thoroughly knowledgeable about the business areas supported including their strategies, functional processes, and dynamics; demonstrates significant and increasing knowledge of other business areas within the State, overall State strategies, and key trends; factors this knowledge into decision making regarding investments and strategies; leads or participates in division or bureau-wide projects.
- Partners with clients and senior management as appropriate to determine which projects to approve and fund; manages multiple projects, usually through supervision of project leaders, including establishing plans, prioritizing initiatives and ensuring resources and organizational structure are in place and operating effectively; anticipates and proactively resolves conflicting needs; manages organizational challenges and obstacles to success for key projects.
- Integrates the potentially diverse needs of many clients and stakeholders and successfully manages varying perspectives; communicates with key stakeholders to monitor and facilitate satisfaction; monitors project leader communications with clients, mentors, and ensures project deliverables meet specifications.
- Delegates supervision and/or integrates activities across teams with the aim of accomplishing applications systems development and maintenance goals while balancing priorities, business requirements, costs, standard practices, and staffing.
- Works with supervisory team leaders to identify training needs; provides policy direction on required trainings; provides career counseling, with particular attention to developing top management and technical talent for the future.
- Sets a framework for the provision and support of solutions, including resourcing, project management, and development standards.
- Manages and engages in effective people management activities such as recruitment, interviewing, hiring, training and retention, including personnel actions such as performance reviews and discipline to ensure adequate and competent staff; approves hiring recommendations.
- Manages budget(s) to achieve budget objectives and ensure proper expenditure of funds.

### Competencies

- Displays Integrity & Commitment
- Acts Decisively
- Builds Strong Alliances
- Demonstrates Astuteness
- Builds Competence
- Exercises Due Diligence
- Focuses on Customer Needs
- Achieves Successful Results
- Communicates Powerfully
- Develops Successful Teams

**Job Knowledge** (typical education/experience preferred for entry into the level)

Typically requires a degree in software engineering or related field, plus progressive software engineering experience typically over 15 or more years, including 2-4 years experience managing others in a supervisory capacity.

**Career Development**

This role provides the opportunity to strengthen leadership abilities and make a primary commitment to management with full personnel authority; lead and build multiple effective teams of professional staff and/or first level management, including setting the direction and establishing the culture of the teams; gain pride from facilitating others' success and impact career development; learn budget development and fiscal management; and influence BIT and statewide policies. To develop proficiently in this role, it will be important to identify what motivates key stakeholders, peers, and employees; delegate responsibility and focus primarily on leading and providing direction, including accepting that one will no longer be the "technical expert"; develop the talents and skills of team leaders; accept responsibility for team performance and support team needs and decisions; identify ways to manage stress and display patience; research and utilize others expertise to form decisions, exercise sound judgement, and develop a solid vision and direction; strengthen key relationships; and listen and communicate effectively in order to inform, educate, influence, and ensure understanding.