



STATE OF SOUTH DAKOTA  
CLASSIFICATION SPECIFICATION

**Software Series**

*In this series:*

<b>Classification</b>	<b>Class Code</b>	<b>Pay Grade</b>	<b>Civil Service</b>	<b>FLSA</b>
<a href="#">System Developer</a>	808504	IT 4	Covered	Non-Exempt
<a href="#">Software Engineer</a>	808506	IT 6	Covered	Exempt
<a href="#">Senior Software Engineer</a>	808508	IT 8	Covered	Exempt
<a href="#">Enterprise Architect</a>	808510	IT 10	Exempt	Exempt
<a href="#">Software Professional</a>	808509	IT 9	Exempt	Exempt
<a href="#">Software Manager I</a>	808519	IT 9	Exempt	Exempt
<a href="#">Software/Application Manager II</a>	808521	IT 11	Exempt	Exempt

**Purpose of Series**

This series captures the breadth and depth of work that occurs within the software development lifecycle. These positions design, create, and maintain mobile, web, server, and console applications using systems software, application software, and programming languages.



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System Developer	808504	IT 4	Covered	Non-Exempt

**Role Description**

Under general supervision, incumbents work according to approved specifications to accomplish assignments. System Developers write and test code that allows computer applications and software programs to function properly. Incumbents develop and maintain low to moderately complex components working on a team. System Developers typically receive guidance and support from more experienced team members.

**Example Functions**

- Creating interactive user interface components and data visualizations for systems and high-quality tools.
- Developing software verification plans and quality assurance procedures.
- Devising program logic, selecting and adapting standard programming procedures.
- Gathering, documenting, and reviewing system requirements and specifications.
- Integrating software components into a fully functional software system.
- Producing specifications and determine operational feasibility.
- Testing, debugging, and evaluating software systems functionality.
- Writing well designed, testable, secure & efficient code.

**Requisite Knowledge, Skills, and Experiences**

- Broad understanding and knowledge of data management, data organization and retrieval systems and technologies including common database systems including Microsoft SQL, Oracle, MySQL, DB2, SQLite.
- Thorough understanding and knowledge of standard development processes, procedures, systems and architectures; including but not limited to C#, .NET, C, C++, Python, Java, SQLite.
- Broad understanding of data standardization, cleansing, integration processes and systems; and performance metrics for business value.
- User interface and user experience (UI/UX) design.



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Software Engineer	808506	IT 6	Covered	Exempt

**Role Description**

Working independently, Software Engineers apply expertise in programming procedures to complex programs and modify and adapt precedent solutions and proven approaches. Assignments typically affect a broad area or highly complex systems and are carried out in successive steps. Incumbents resolve problems and deviations in accordance with instructions, policies, and accepted practices. Software Engineers maintain technical ownership of projects and managing resources and may assist with organizing work to deliver features and solutions.

**Example Functions**

- Building entire systems or their features and interfaces that are highly available, intuitive, scalable, and secure to meet current and future software and application requirements.
- Conducting design and code reviews to ensure highly reliable and performant code maintains scalability, performance, and alignment with standards and best practices.
- Designing, developing, coding, and testing programs, applications, and technical solutions following lifecycle software development (SDLC).
- Following change and release management policies to ensure data integrity, compliance, and system stability.
- Identifying and managing risks that stem from business activities and the job role.
- Advocating, recommending, & championing process improvements.
- Participating in team and system demonstrations to accept completed stories and features.
- Working with product managers to create software that is optimized for business metrics

**Requisite Knowledge, Skills, and Experiences**

- Knowledge of system software, hardware, work processes, regulations and management practices.
- Understand and use data analytical concepts to provide cost savings to clients.
- Understand performance metrics for business value.
- Interpersonal skills to work with multiple collaborative teams to identify and resolve issues.
- Communicating issues and suggesting alternative, innovative, and creative solutions for technical problems.
- Self-motivated work ethic with excellent time-management skills
- Use of agile methodologies to support all aspects of product development.



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Senior Software Engineer	808508	IT 8	Covered	Exempt

### **Role Description**

Under administrative supervision, Senior Software Engineers plan and carry out assignments, resolve most conflicts, and coordinate work with others and interpret policy on own initiative with limited need for direction. Incumbents are expected to lead and own complex technical initiatives. At this level in the series, Senior Software Engineers begin setting the vision and future direction of team. The impact is across multiple related teams. This role is more focused on design rather than implementation depending on size and expectations of projects. Senior Software Engineers provide leadership, guidance, and expertise all aspects of the software development lifecycle. Incumbents support business development through technical writing for RFIs and RFPs.

### **Example Functions**

- Applying anomaly detection algorithms and energy optimization methods.
- Assisting with architectural guidance, including the ongoing support of new features and functionality.
- Designing standard database and data architecture.
- Gathering business requirements for new or changing complex services and systems.
- Leading all aspects of system validation and customer implementations to ensure successful deployment.
- Monitoring, testing, and optimizing systems and software for performance, availability, reliability, scalability, and automation.
- Preparing and conducting all aspects of system demonstrations including independently setting up developmental equipment.
- Preparing and delivering system performance statistics and reports.
- Providing insight to the operations team and assisting in performance management.
- Recommending architectural designs and in a collaborative manner with team members and stakeholders.
- Translating logical requirements to physical designs, while taking account of business requirements, target environments, processes, performance requirements and existing systems and services.
- Writing, reviewing, and debugging code to design and build fast, secure, and scalable applications.

### **Requisite Knowledge, Skills, and Experiences**

- Knowledge and application of unit, functional, and integration tests.
- Knowledge and experience in Webservice / API Design and Integration experience (REST).
- Knowledge of an organization's software and system needs to recommend best tools, practices, and workflows
- Knowledge of object- or component-oriented programming concepts to identify, prioritize and execute tasks
- Managing multiple concurrent priorities and meeting deadlines with various teams and stakeholders.

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Software Professional	808509	IT 9	Exempt	Exempt

**Role Description**

Under executive supervision, the Software Professional (platform engineer) will carry out architect level duties but for a single platform. Incumbents' will possess strong project management skills. Serve as a liaison between roles providing expertise, high-level technical planning, and maintaining in depth knowledge of their platform or systems business strategies and goals. Provide technical leadership, which includes coordinating technical teams, third-party contractors, SMEs, and stakeholders to ensure standards and processes are met.

**Example Functions**

- Provide technical guidance and oversight for the team's training, cross-training, and mentoring for the assigned platform.
- Oversee the team's design, development, and execution of standard and non-standard operations.
- Independently researches and evaluates hardware and software; solutions to issues and challenges; and opportunities for new services.
- Developing, vetting, enforcing technical policies and procedures related to assigned platforms.
- Participates and contributes to the creation of strategic and operational plans for the assigned platform.
- Assures the team contributes to and accomplishes the vision and goals developed and provided by architect and management staff.
- Ensures planning and tasks performed consider enterprise and service-specific impacts.
- Collects and provides feedback on capabilities and limitations of assigned platform/system and its components.
- Assures the follow-through of enterprise vision and goal for assigned platform/system.
- Coordinate technical teams, third party contractors, SMEs, and stakeholders to ensure appropriate processes and standards are met.
- Promote the adoption of modern methods and technologies for assigned platform.
- For a single platform or system provides the high-level technical planning for future states.
- Serve as the interface between management and the assigned platform/system engineering team.
- Represents the program team when a technical expert is needed in complex or confrontational settings.

**Requisite Knowledge, Skills, and Experiences**

- Maintain knowledge of how assigned platform(s) are interdependent with other platforms.
- Maintains in-depth knowledge of the state business strategies and goals.
- Maintain productive working relationships with staff, clients, and vendors.



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Enterprise Architect	808510	IT 10	Exempt	Exempt

**Role Description**

Performs work without guidance and applies advanced knowledge and skills in complex, difficult, or novel work situations. This is the expert advisor level. 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 domain. Incumbents may have extensive decision-making authority and direct the most critical/complex projects.

**Example Functions**

- Translating all necessary characteristics into a solution blueprint shaping components and defining communication and coordination between them.
- Demonstrating feasibility of proposed information systems.
- Establishing standardization of methodologies, design approaches, tooling, and technologies across the organization.
- Analyzing business properties, entities, and external environment.
- Gathering business requirements for new or changing complex services and systems and translates logical requirements to physical designs, taking account of business requirements, target environments, processes, performance requirements and existing systems and services.
- Developing goals and strategy for enterprise architecture of the state or agencies and advises management and executive level staff on governance and policy that support forward movement.
- Providing architectural design and technical leadership in a collaborative manner with team members and stakeholders.
- Reporting to executive levels to provide the highest-level oversight, with the intent to mitigate risks.

**Requisite Knowledge, Skills, and Experiences**

- Knowledge of the state's internal policies and goals and skill to enact them in the current environment.
- Knowledge and understanding of overall technological landscape, current information technology trends, and advances in the field.
- Knowledge and skill to determine how the internet of things, machine learning, or artificial intelligence can be leveraged; and to update executive management on new frameworks, platforms, and practices.



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Software Manager I	808519	IT 9	Exempt	Exempt

**Role Description**

Supervises and manages a team of software staff who design, create, and maintain mobile, web, server, and console applications using systems software, application software, and programming languages.



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Software Manager II	808521	IT 11	Exempt	Exempt

**Role Description**

Supervises and manages multiple teams of software staff who design, create, and maintain mobile, web, server, and console applications using systems software, application software, and programming languages.