

## SANTA CLARA COUNTY OFFICE OF EDUCATION

### **CLASS TITLE: SOFTWARE ENGINEER – SENIOR**

#### **BASIC FUNCTION:**

Under assigned supervision, the Software Engineer - Senior serves as project team leader for new and modified web development projects and provides technical direction and assistance to the team; researches and selects software, hardware and infrastructure for system implementation based on customer needs, time, budget and feature restrictions; communicates with users and project team members to recommend design options, determine functionality, simulations and programming needed for system requirements; designs, develops, analyzes, implements and maintains highly complex web-based business applications for the Santa Clara County Office of Education, districts, schools and community; codes, tests and scripts programs and databases using web-based interactive technologies; schedules and coordinates the programming efforts of staff to assure timely completion of projects.

#### **REPRESENTATIVE DUTIES:**

The following duties are examples of assignments performed by incumbents in this classification. It is not a totally comprehensive list of duties, nor is it restrictive regarding job assignments.

#### **ESSENTIAL DUTIES:**

Serves as project leader for new and modified web development projects; communicates with user/client to discuss business needs, assess current processes and procedures; utilizes object-oriented methodology, including modeling, role playing, storyboarding and other methods; assists users identify technology problems, future business needs and technology solutions; prepares project plans, timelines, and cost estimates of projects.

Researches and selects software, hardware and infrastructure for system implementation based on customer needs, time, budget, and feature restrictions; organizes and facilitates meetings with customers; develops and documents functional requirements and specifications; develops and establishes standard procedures and best practices for the project team; researches and implements new technologies and provides technical direction and assistance to the team.

Schedules and coordinates the programming efforts of staff to assure timely completion of projects; provides direction and technical assistance to staff in the resolution of technical and programming problems; maintains timelines for projects to assure compliance with project delivery dates.

Builds, tests and implements complex business systems; creates prototypes and mock-ups, including physical interface, logical and data models; writes reusable code to automate design and functionality; using various object-oriented programs; writes semantic, valid HTML code for structural presentation of content.

Develops, designs, analyzes, implements, and maintains complex web-based business application programs using desktop, web-based programming languages and tools; communicates with users and

project team members to recommend design options, determine functionality, simulations and programming needed for system requirements.

Reviews program development with clients and modify as necessary; communicates with clients, users and project team to determine functionality, programming needed for recommended design options or to resolve complex problems.

Designs and codes programs for a clean compile; develops and modifies data flowcharts and diagrams, entity relationship diagrams; documents systems design; tests and scripts programs and databases using web-based interactive technologies; develops screen prototypes; prepares detailed design specifications; analyzes, develops, and tests screen processes.

Writes enhancements and document production jobs; monitors and schedules production jobs; determines and analyzes operating characteristics and requirements; schedules project reviews status of submitted jobs; analyzes and resolves problems as necessary; resubmits jobs as required.

Assists production team test and adjust function, platform independence and user requirements; makes modifications for final changes as necessary.

Implements the system; prepares production documentation and instructions; prepares and maintains technical and user system manuals; provides training on new procedures.

Develops solutions for complex requirements using Content Management Systems, Learning Management Systems and technologies or other third-party tools and software; codes or updates common program routines to be shared among programs.

Creates test plan and test cases; executes unit test and documents results; assists users to develop and execute system test; provides support to client and resolves problems; debugs problem programs; implements new programs.

Creates and maintains computer database systems and tables, SQL stored procedures and indices; downloads existing data into tables for use in new applications.

Identifies opportunities for operational improvements to existing systems; analyzes user work processes, requirements, and costs of implementing service requests.

Provides technical assistance for web-based business applications, including hardware and/or software problems resolution to ensure system availability, data integrity, and timely and accurate reporting; documents issues and possible solutions/recovery procedures.

Compiles and generates special reports, creates tables, forms, and queries; prepares and presents progress reports.

**OTHER DUTIES:**

Performs related duties as assigned.

**KNOWLEDGE AND ABILITIES:****KNOWLEDGE OF:**

Software, hardware and infrastructure for system implementation.  
 Object-oriented methodology, including modeling, role playing, storyboarding and other methods.  
 Principles of training and providing work direction and guidance to others.  
 Schedule and coordinate the programming efforts of staff to assure timely completion of projects.  
 Research and implement new technologies and provide technical direction and assistance to the team.  
 Internet application development including HTML, ASP.NET, VB.NET, JavaScript and ODB.  
 Team software development roles and practices.  
 Object oriented design and one or more object-oriented programming languages.  
 Database performance optimization.  
 SQL query design.  
 Server-side scripting techniques including Active Server Pages (ASP or ASP.NET), VB.NET -as well as client-side scripting such as JavaScript.  
 Job flow within client server computing environment with networked servers.  
 Systems analysis and design.  
 NT or similar operating systems.  
 Emerging technologies and software.  
 Proper English usage including grammar, spelling, punctuation and sentence structure.  
 Current versions of web development programs and languages.  
 Current version of Internet Information Server and assigned databases.  
 Image scanning and manipulation.

**ABILITY TO:**

Oversee, coordinate and perform responsible web development and programming activities.  
 Train and provide work direction and guidance to others.  
 Research and select software, hardware and infrastructure for system implementation.  
 Utilize object-oriented methodology, including modeling, role playing, storyboarding and other methods.  
 Effectively use programmer development environment software such as Active Server Pages (ASP or ASP.NET), VB.NET as well as client-side scripting such as JavaScript.  
 Operate, maintain, manipulate and design solutions using Content Management Systems, Learning Management Systems or other third-party tools and software.  
 Create rapidly deployed and customer service focused web applications.  
 Effectively troubleshoot, test, use logic and analysis to solve complex computer and system problems.  
 Maintain data base systems.  
 Communicate effectively in both oral and written form.  
 Interpret technical procedures and documentation and explain technical concepts in non-technical terms to clients and users.  
 Conduct small group and individual client training.  
 Prepare correspondence, technical reports and user guides and procedure manuals.  
 Prioritize, organize and schedule work assignments and projects.  
 Work under limited supervision with only occasional instruction and assistance.  
 Establish and maintain cooperative work relationships with those contacted in the performance of required duties.  
 Create and maintain the Internet and Intranet web sites.  
 Create HTML Files.  
 Integrate document management system and documents with Web pages.

Transfer files from and to web servers.  
Communicate with various users regarding content posted on the Web and meet their needs.  
Create programs to allow users to view and/or manipulate data residing on a server through a browser (Web-enabling).  
Prioritize and schedule work.  
Work independently with little direction.  
Meet schedules and timelines.  
Establish and maintain cooperative and effective working relationships with others.

**EDUCATION AND EXPERIENCE:**

Any combination equivalent to: Associate’s degree in computer science, information systems, or a related field and four years of experience in systems analysis, systems engineering, programming, data analysis or related field.

**LICENSES AND OTHER REQUIREMENTS:**

Valid California driver’s license.

**WORKING CONDITIONS:**

**ENVIRONMENT:**

Office environment.

**PHYSICAL DEMANDS:**

Dexterity of hands and fingers to operate a computer keyboard.  
Seeing to read a variety of materials.  
Sitting for extended periods of time.  
Hearing and speaking to exchange information.

Approved by the Personnel Commission: March 12, 2014  
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Marisa Perry  
Director III – HR / Classified Personnel Services

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