Draft Classification Standards – To Be Effective 10/01/2025
Data Analytics Developer Series

Class Title	Class Code	Issue Date	FLSA
Data Analytics Developer I	*XXXX*	*XXXX*	*Non-Exempt*
Data Analytics Developer II	*XXXX*	*XXXX*	*Exempt**
Data Analytics Developer III	*XXXX*	*XXXX*	*Exempt**
Data Analytics Developer IV	*XXXX*	*XXXX*	*Exempt**

OVERVIEW:

Positions in the Data Analytics Developer series are responsible for designing, developing, implementing, and building analytic solutions. They leverage data to inform strategic decision-making and enhance operational efficiency. The data analytics developer utilizes a variety of programming languages and tools to extract insights from complex datasets. Positions apply systematic data collection procedures that maintain data integrity/quality and utilize analytical software to build complex data models and conduct statistical analysis to extract insights from large data sets.

Positions are assigned to classifications within the series based on the scope and complexity of specialized data analytics development activities; degree of independence and judgement; experience, knowledge, skill, and ability required; degree of planning, analysis, and execution required by the position; impact and risk to the university; and nature of supervision received. Higher levels within the series build upon and include the knowledge and skill requirements and work assignments of lower levels within the series.

> *Data Analytics Developer I* – Entry-level professional who applies basic professional concepts to resolve problems of limited technical scope and complexity. Normally operates under established guidelines. Assignments may be routine in nature and involve performing various duties related to designing and maintaining data models, algorithms, and visualizations. Follows standard practices and procedures.

> *Data Analytics Developer II* – Professional who applies acquired job skills, policies, and procedures to complete significant assignments, projects, and tasks of moderate technical scope and complexity related to developing data analytics solutions. Draws from prior experience and knowledge of data analytics methodologies and practices to exercise judgment while developing and customizing relevant systems to support the institution's goals and objectives.

> *Data Analytics Developer III* – Professional who applies advanced job skills, in-depth organizational and stakeholder acumen, and technical project planning skills to complete the planning, design, and development of data analytics solutions. Exercises advanced discernment and in-depth knowledge of data analytic solutions, data documentation transformation and migration, troubleshooting, and determining appropriate infrastructure needs. May require the development of new approaches, techniques, and innovation to address issues. Responsible and accountable for the development and design of data systems, models, algorithms, and statistical analyses.

> *Data Analytics Developer IV* – Technical expert and leader with a high degree of knowledge in data analytics solutions. Problem-solving frequently requires analysis of

* This classification as outlined in this document meets the duties test of the Administrative Exemption. An employee's actual exemption status may differ based on salary rate and actual duties performed.

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unique issues or problems without precedent and/or structure and new approaches, methods, techniques, or innovation. Responsible for conceptualization, integration, and implementation of data systems, models, algorithms, and statistical analyses. Functions with a high degree of autonomy.

TYPICAL PROGRAMS, ACTIVITIES, AND CORE FUNCTIONS/DISCIPLINES *(May include but are not limited to)*:

- *Data Science/Data Mining* – Creates data mining architecture, statistical reporting, and data analysis methodologies to identify trends. Researches and applies knowledge of existing and emerging data science principles, theories, and techniques to inform business decisions.

- *Data Processing* – Designs and develops scripts and processes to extract data from a variety of source systems. Implements robust data cleaning and data quality checks to ensure data integrity. Develops scripts and program logic to transform and organize raw data into a suitable format for analysis and reporting. Loads the final data set into systems.

- *Data Analytics and Modeling* – Performs complex analytics and statistical modeling on data sets. Recommends and develops data quality standards and improvements. Designs and develops reports and dashboards to identify key business metrics, trends, and analytical needs. Gathers and analyzes data requirements and data flows connected to other systems. Transforms database requirements into logical data models and defines the database structure. Optimizes database performance through efficient indexing and table relationships.

- *Business Intelligence* – Analyzes data and provides reports and other output that are utilized for business unit functional and strategic-level decisions. Blends historical data from available industry reports, public information, field reports, or purchased sources as inputs. Identifies, analyzes, and monitors current and potential trends. Partners with other areas of the business unit to model the outcome of implementing potential business strategies.

DISTINGUISHING CHARACTERISTICS

- Positions in this classification are distinguished from positions in other classes in that they are primarily builders, rather than users, of data models and maintain IT data analytics solutions and tools.
- Positions that primarily use, as opposed to build, these models and tools to interpret data in support of decision making are typically not appropriate for this classification.
- Other classifications to consider are: Database Administrator, Software Developer, and Institutional Research Analyst.

DATA ANALYTICS DEVELOPER I

Under direct supervision, performs entry-level professional data analytics system maintenance and development. Performs less complex assignments following detailed and established procedures. Work is reviewed for accuracy and soundness of technical concepts.

Work assignments typically include some or all of the following:

- Designs less complex data models, algorithms, and statistical analyses under the guidance of senior data analytics developers.
- Designs routine processing to provide normalized data for reporting.
- Performs data cleaning and data validation processes to ensure data accuracy and consistency.
- Writes efficient, scalable, and maintainable code to process, analyze, and visualize large and complex datasets.
- Creates interactive dashboards, reports, and visualizations to communicate findings to stakeholders.
- Performs basic data quality checks and identifies obvious data errors or inconsistencies and complies with basic security protocols.
- Applies data operations principles to ensuring iterative development in providing high quality data and low error rates.
- Documents data analytics processes, methodologies, and code to ensure knowledge transfer and maintainability.
- Creates user manuals, technical documentation, and training materials for end-users.

MINIMUM QUALIFICATIONS:

Knowledge and Skill:

- Foundational knowledge of databases, data operations, data modeling, statistical analysis, and machine learning concepts.
- Familiarity with foundational data governance concepts, understanding of data management principles, and basic knowledge of compliance requirements related to data governance, privacy, and security.
- General knowledge of programming skills in relevant software languages.
- Problem solving and analytical skills to design data models, algorithms, and statistical analysis.
- Demonstrated communication and interpersonal skills to gather information from clients, communicate technical issues effectively, document processes, and draft user guides.
- Organizational and time management skills to plan, organize, and prioritize work.
- Ability to maintain confidentiality and appropriately handle sensitive information.
- Ability to be accurate and pay attention to detail.
- Ability to work independently and as part of a team as well as build relationships with diverse stakeholders.
- Knowledge of data visualization tools.
- Computer skills to appropriately troubleshoot and alter systems as required.

Experience and Education:

Equivalent to a bachelor's degree in a related field. Relevant education and/or experience which demonstrates acquired and successfully applied knowledge and abilities shown above may be substituted for the required education on a year-for-year basis.

DATA ANALYTICS DEVELOPER II

Under general supervision, designs, develops, and maintains data analytics solutions across the university. Applies relevant data modeling, statistical analysis, and machine learning concepts to design and develop relevant data analytics solutions where needed to support the university's

goals and objectives. Works independently on most day-to-day assignments with general supervision on new assignments or projects to align with objectives. Handles multiple work priorities and is accountable for own work results.

In addition to duties performed by the Data Analytics Developer I, the Data Analytics Developer II typically performs the following duties:

- Designs and develops complex data models, algorithms, and statistical analyses to draw insights from large and diverse datasets.
- Conducts advanced data analysis, including predictive modeling, machine learning, and optimization techniques.
- Performs data operations to seamlessly integrate, transform, and manage diverse datasets as well as ensure data accuracy and consistency.
- Utilizes strong knowledge of programming languages and tools to develop scalable and efficient data analytics solutions.
- Analyzes data for quality issues and completeness, maintains documentation, and ensures compliance with data governance policies.
- Writes and reviews code to process, analyze, and visualize complex datasets.
- Implements data pipelines, automation processes, and data engineering techniques to optimize data workflows at the direction of managers.
- Collaborates with stakeholders to understand their data needs and develop customized data analytics solutions.
- Contributes to project planning process, follows project timelines, and tracks activities and variances.
- Mentors other data analytics developers and provides guidance and support in projects.

MINIMUM QUALIFICATIONS:

In addition to Data Analytics Developer I knowledge and skill requirements, work assignments typically require:

- Strong knowledge of data manipulation, transformation, and analysis using advanced programming libraries or frameworks.
- Strong programming skills in relevant languages.
- Experience with data visualization tools to create interactive dashboards and reports.
- Working knowledge of data modeling, statistical analysis, machine learning, and optimization techniques.
- Proficiency in data quality management, understanding of metadata management concepts, and knowledge of data security protocols.
- Strong project planning, organizational, and time management skills to plan, organize, prioritize, and manage multiple projects.
- Strong attention to detail and accuracy.
- Familiarity with data operations principles such as ongoing integration and delivery and testing.
- Strong communication and interpersonal skills with the ability to present complex and technical information to a technically diverse audience in a clear and concise manner.
- Strong analytical skills to develop complex data models and draw insights from large and complex data sets.
- Skill in providing direction and training to others.
- Proficiency in relevant programming languages.

Experience and Education:

Equivalent to a bachelor's degree in a related field and two years of relevant experience. Additional experience which demonstrates acquired and successfully applied knowledge and abilities shown above may be substituted for the required education on a year-for-year basis. An advanced degree in a related field may be substituted for the required experience on a year-for-year basis.

DATA ANALYTICS DEVELOPER III

Working independently under general supervision, provides expertise in data analytics solutions. Applies advanced technical knowledge and expertise in data analytics to lead data research and business intelligence analysis initiatives. Provides technical advice, guidance, and mentoring to other professionals. Work is focused on enterprise-wide data solutions. Demonstrates advanced discernment in creating, reporting, and maintaining institutional data. Conducts data analyses and prepares relevant reports. Decision-making is based on technical accuracy; data analytics design best practices; systems standards; university and information technology policies, guidelines, and protocols; higher education system protocols and standards; as well as overall university and technology strategies and goals. Work is focused on ensuring alignment with overall objectives. Handles multiple work priorities and may provide lead work direction with accountability for results.

In addition to duties performed by the Data Analytics Developer II, the Data Analytics Developer III typically performs the following duties:

- Collaborates with various stakeholders and cross-functional IT teams to plan and lead data analytics projects. Ensures analysis and solutions meet business needs IT standards and protocols.
- Designs new and recommends improvements to existing data analytics processes and procedures.
- Designs and develops highly advanced data models and statistical analyses.
- Performs highly complex data cleansing, transformation, and integration to ensure data accuracy and consistency.
- Leads and provides mentoring to other data analytics developers.
- Enforces data operations, data quality standards, data governance pipelines, and best practices.
- Identifies and implements data privacy and security measures from project inception. Collaborates with IT teams and data stewards to establish data governance standards and best practices.
- Applies advanced analytics techniques, to solve complex problems.
- Explores and evaluates new tools, frameworks, and methodologies to enhance data analytics capabilities, and implement when appropriate.

MINIMUM QUALIFICATIONS:

In addition to Data Analytics Developer II knowledge and skill requirements, work assignments typically require:

- Thorough and advanced knowledge of data manipulation, transformation, and analysis using advanced programming libraries or frameworks.
- Advanced knowledge of data modeling, statistical analysis, machine learning, and optimization techniques.

- Advanced understanding and skills in data quality assessment techniques, metadata documentation and modeling, and data governance frameworks, methodologies, and best practices.
- Advanced problem solving and analytical thinking skills to conceptualize data analytics solutions to inform strategic business decisions and provide insights to research and other complex problems.
- Ability to translate business requirements into specifications and communicate and report insights in a clear and actionable manner to diverse stakeholders including leadership.
- Demonstrates competence in independently applying advanced judgment to solve difficult and complex problems and issues.
- Advanced project management skills, with the ability to manage complex projects and high impact initiatives.
- Advanced communication and interpersonal skills, to build partnerships and communicate effectively in a diverse environment.
- Ability to effectively present ideas and training and gain buy-in from stakeholders to adopt and implement requirements.
- Advanced skill in mentoring or overseeing the work of other data analytics developers.

Experience and Education:

Equivalent to a bachelor's degree in a related field and four years of relevant experience. Additional experience which demonstrates acquired and successfully applied knowledge and abilities shown above may be substituted for the required education on a year-for-year basis. An advanced degree in a related field may be substituted for the required experience on a year-for-year basis.

DATA ANALYTICS DEVELOPER IV

Working primarily independently with minimal supervision, utilizes expert knowledge of data analytics systems and organizational needs to develop and deliver data analytics strategies and solutions aligned with organization goals and objectives. Collaborates with cross-functional teams and leads data analytics systems projects. Problems are highly complex and may require the creation of new procedures and techniques. Serves as a consultative expert in the conceptualization and implementation of data analytics systems and tools. Decision-making often requires expert knowledge on data analytics design best practices; in-depth knowledge of university and information technology policies, guidelines, and protocols; as well as an understanding of university strategies and goals. Work often requires a high degree of technical expertise, persuasion, and leadership.

In addition to duties performed by the Data Analytics Developer III, the Data Analytics Developer IV typically performs the following duties:

- Develops and executes data analytic strategies aligned with campus or department goals and objectives, as directed by management.
- Develops data governance frameworks, implements advanced data security measures, and ensures comprehensive compliance with data governance regulations.
- Collaborates with management to conceptualize data-driven initiatives, roadmaps, and projects. Plans and leads high impact data analytics projects.

- Leads and directs data analytics developers, ensuring compliance with best practices and driving results across projects. Oversees the project planning process, creates project timelines, and tracks activities and variances.
- Provides strategic advice and contributes to the university's short term and long-term data analysis strategies as well as governance policies and procedures.
- Implements and develops ongoing integration and delivery standards across the board to ensure the quality and security of the data.

MINIMUM QUALIFICATIONS:

In addition to Data Analytics Developer III knowledge and skill requirements, work assignments typically require:
- Expert knowledge of data manipulation, transformation, and analysis using advanced programming libraries or frameworks.
- Expert knowledge of data modeling, statistical analysis, machine learning and optimization techniques.
- Expert in leading and executing complex and high impact data analytics projects and initiatives.
- Expert in data operations standards.
- Expertise in data security architectures, ensuring regulatory compliance, and ability to recommend and implement data governance strategies.
- Expert knowledge and skill in applying and interpreting technology policies, protocols, and standards, as well as data governance best practices. As appropriate, recommends data governance protocols and strategies.
- Expert project planning, organizational, and time management skills to plan, organize, prioritize, and manage multiple projects.
- Expert communication and interpersonal skills to develop and drive strategic data analytics initiatives and persuade management and cross-functional stakeholders.
- Expert in independently applying advanced judgment to solve difficult and complex problems and issues.
- Expert skill in mentoring and overseeing the work of other data analytics developers.

Experience and Education:
Equivalent to a bachelor's degree in a related field and five years of relevant experience. Additional experience which demonstrates acquired and successfully applied knowledge and abilities shown above may be substituted for the required education on a year-for-year basis. An advanced degree in a related field may be substituted for the required experience on a year-for-year basis.

NOTES:

All IT professionals protect the confidentiality and integrity of data and electronic information from incidental, intentional, unauthorized release and/or preventable misuse or loss to the university. IT professionals at the university, regardless of classification, play a critical role in ensuring the security and protection of sensitive information, systems, and digital assets with which they work/ related to their work. This includes upholding data confidentiality, integrity, and availability and actively contributing to a culture of cybersecurity awareness and compliance throughout the university's technological ecosystem.

The California State University has a long-standing commitment to make its programs, services, and activities accessible to the public and the entire campus community. All professionals classified within the Information Technology Series have the expectation to support practices and techniques that align with federal and state law, as well as the CSU initiatives, coded memorandums, and executive orders.

Acronyms and technical terms used in this classification document are current as of the publication date. Subsequent technical, functional, and usage terminology and acronyms should be used in position descriptions as appropriate.