Job Family	Information Technology	Job Summary	Involves developing and utilizing computational tools and systems to analyze and interpret biological or other research data. Utilizes and develops algorithms, computational techniques, and statistical methodologies. Helps in the design of new experiments. Implements end-user needs in database searching and integration. Maintains the computational infrastructure and tracks the flow of samples and information for large-scale studies. Provides web-based bioinformatics and access to public and proprietary databases.
Job Function	Bioinformatics		
Category	**Professional**		

Job Level	Entry	Intermediate	Experienced	Advanced	Expert
Job Title	Bioinformatics Programmer 1	Bioinformatics Programmer 2	Bioinformatics Programmer 3	Bioinformatics Programmer 4	Bioinformatics Programmer 5
Job Code	9403	9402	9401	5933	5993
Tracking Code	A1327	A1053	A1054	A1055	A1056
Per. Program	PSS	PSS	PSS	MSP	MSP
FLSA	Non-Exempt	Non-Exempt	Exempt	Exempt	Exempt
Generic Scope	Entry-level professional with limited prior experience; learns to use professional concepts to resolve problems of limited scope and complexity; works on assignments that are initially routine in nature, requiring limited judgment and decision making. Employees at this level are expected to acquire the skills and knowledge to perform more advanced work following an agreed upon time in position, through defined training and development planning.	Professional who applies acquired job skills, policies, and procedures to complete substantive assignments / projects / tasks of moderate scope and complexity; exercises judgment within defined guidelines and practices to determine appropriate action.	Experienced professional who knows how to apply theory and put it into practice with in-depth understanding of the professional field; independently performs the full range of responsibilities within the function; possesses broad job knowledge; analyzes problems / issues of diverse scope and determines solutions.	Technical leader with a high degree of knowledge in the overall field and recognized expertise in specific areas; problem-solving frequently requires analysis of unique issues / problems without precedent and / or structure. May manage programs that include formulating strategies and administering policies, processes, and resources; functions with a high degree of autonomy.	Recognized organization-wide expert. Has significant impact and influence on organizational policy and program development. Regularly leads projects of critical importance to the organization; these projects carry substantial consequences of success or failure. Directs programs with organization-wide impact (or may have impact beyond the University) that include formulating strategies and administering policies, processes, and resources. Significant barriers to entry exist at this level.
Custom Scope	Under direct supervision, applies professional bioinformatics concepts and computational procedures to complete small projects or portions of projects. Works on assignments of limited scope and complexity. Follows standard programming procedures to analyze situations and data from which answers can be readily obtained.	Uses professional bioinformatics concepts. Applies computational procedures to resolve a variety of analysis and research issues. Works on assignments of moderate scope where analysis of data requires a review of a variety of factors. Assists in additional analyses as needed to achieve research objectives.	Uses skills as a seasoned, experienced bioinformatics programming professional with a broad understanding of computational algorithms and systems; identifies and resolves a wide range of issues / software bugs. Demonstrates good judgment in selecting methods and techniques for obtaining solutions. Operates independently.	Uses skills as an advanced, specialized bioinformatics programming professional with an in-depth understanding of computational algorithms and systems to identify and resolve a wide range of highly complex issues / software bugs where analysis of situations or data requires an in-depth evaluation of variable factors. May lead or mentor a team of bioinformatics programming professionals.	Functions as a highly specialized bioinformatics programming professional with an expert understanding of computational algorithms and systems to identify and resolve a wide range of highly complex issues where analysis of situations or data requirements have little or no precedent. Project scope is broad and may extend beyond the university. Is considered a subject matter expert of the organization and often recognized as an expert externally in the field. Leads a team of bioinformatics professionals.
Key Resp 01	Under direct supervision, utilizes basic software tools to analyze or interpret	Utilizes standard software tools to analyze, interpret or create moderately	Applies complex bioinformatics concepts to design, develop, modify,	Applies advanced bioinformatics concepts to design, develop, modify,	Applies advanced bioinformatics concepts to design, develop, modify,

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Job Level	Entry	Intermediate	Experienced	Advanced	Expert
	biological or research data of limited scope and complexity.	complex biological or research data.	debug, and evaluate software programs, systems, and web tools.	debug, and evaluate highly complex software programs, systems, and web tools.	debug, and evaluate the most complex software programs, systems, and web tools.
Key Resp 02	Debugs and utilizes basic computer programs.	Designs, develops, debugs and utilizes computer programs.	Conducts bioinformatics programming and testing of new algorithms that interact with other related databases.	Conducts advanced bioinformatics programming and testing of new algorithms that will interact with other related databases.	Conducts highly specialized bioinformatics programming and testing of new algorithms that will interact with other related databases, requiring extensive expertise in the field.
Key Resp 03	Under direct supervision, utilizes basic algorithms, techniques, and statistical methodologies to conduct data analysis.	Utilizes existing algorithms, techniques, and statistical methodologies to conduct moderately complex data analysis.	Analyzes existing programs or works to formulate logic for new systems, devises logic procedures, flowcharts, data analysis, codes and tests / debugs programs.	Formulates logic for new systems, devises logic procedures, prepares flowcharting, performs coding and data analysis, and tests / debugs highly complex programs.	Formulates extremely sensitive or complex logic for new systems, devises logic procedures, prepares flowcharting, performs coding and data analysis, and tests / debugs highly complex programs.
Key Resp 04	Assists with documentation for implementation of changes to operational systems and databases.	Assists with implementation of changes to operational systems and databases.	Develops, implements, and maintains web interfaces to share and display bioinformatics analysis and content with collaborators and other users.	Develops and implements web interfaces to share and display the bioinformatics analysis and content with collaborators and other users.	Develops and implements web interfaces to share and display the bioinformatics analysis and content with national or other external collaborators and other users.
Key Resp 05	Assists with maintenance of web pages.	Maintains web pages.	Recommends and implements changes in development, maintenance and sets system standards for analysis algorithms, tools, and infrastructure.	Recommends and implements changes in development, maintenance and system standards for analysis algorithms, tools, and infrastructure.	Oversees support system for users and researchers worldwide.
Key Resp 06			Performs complex data modeling, performance and integration testing, and builds user interfaces for a variety of internal and external constituents.	Performs highly complex data modeling, performance and integration testing and builds user interfaces for a variety of internal and external constituents.	Leads changes in development, maintenance and system standards for sequence analysis algorithms, tools, and infrastructure.
Key Resp 07				Interacts with senior level internal personnel.	Performs extremely complex data modeling, performance and integration testing and builds screens for a variety of internal and external constituents with broad scope and impact.
Key Resp 08				May lead a team of bioinformatics programming professionals.	Interacts with senior level internal and external personnel.
Key Resp 09					Coordinates development of documentation and presentations with researchers, scientists and other project team members.

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Key Resp 10					Leads a team of bioinformatics programming professionals.
Key Resp 11					May be responsible for project budgets and financial reporting.
Key Resp 12					
Key Resp 13					
Key Resp 14					
Key Resp 15					
Education 1	Bachelor's degree in biological science, computational / programming, or related area and / or equivalent experience / training.	Bachelor's degree in biological science, computational / programming, or related area and / or equivalent experience / training.	Bachelor's degree in biological science, computational / programming, or related area and / or equivalent experience / training.	Bachelor's degree in biological science, computational / programming, or related area and / or equivalent experience / training.	Bachelor's degree in biological science, computational / programming, or related area and / or equivalent experience / training.
Education 2					
Education 3					
Education 4					
License 1					
License 2					
License 3					
License 4					
Cert 1					
Cert 2					
Cert 3					
Cert 4					
Spec Cond 1	Must pass a background check.	Must pass a background check.	Must pass a background check.	Must pass a background check.	Must pass a background check.
Spec Cond 2					
Spec Cond 3					
Spec Cond 4					
KSA 01	Basic knowledge of bioinformatics methods and data structures.	Working knowledge of bioinformatics methods and data structures.	Thorough knowledge of bioinformatics methods, applications programming, web development and data structures.	In-depth knowledge of bioinformatics methods, applications programming, web development and data structures.	Expert knowledge of bioinformatics methods, applications programming, web development and data structures.
KSA 02	Basic knowledge of applications programming and web development.	Working knowledge of applications programming and web development.	Thorough knowledge of bioinformatics programming design, modification and	In-depth knowledge of bioinformatics programming design, modification and	Expert knowledge of bioinformatics programming design, modification and

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Job Level	Entry	Intermediate	Experienced	Advanced	Expert
			implementation.	implementation.	implementation.
KSA 03	Basic knowledge of databases.	Working knowledge of databases.	Understanding of relational databases, web interfaces, and operating systems.	Advanced understanding of relational databases, web interfaces and operating systems.	Expert understanding of relational databases, web interfaces and operating systems.
KSA 04	Basic project management skills.	Working project management skills.	Strong project management skills.	Advanced project management skills.	Highly developed project management skills.
KSA 05	Basic knowledge of modern biology and applicable field of research.	Working knowledge of modern biology and applicable field of research.	Thorough knowledge of modern biology and applicable field of research.	In-depth knowledge of modern biology and applicable field of research.	Expert knowledge of modern biology and applicable field of research.
KSA 06	Interpersonal skills in order to work with both technical and non-technical personnel at various levels in the organization.	Interpersonal skills in order to work with both technical and non-technical personnel at various levels in the organization.	Communication skills to work with both technical and non-technical personnel in multiple fields of expertise and at various levels in the organization.	Advanced interpersonal skills in order to work with both technical and non-technical personnel at all levels in the organization, including senior project leadership.	Highly developed interpersonal skills in order to work with both technical and non-technical personnel at all levels internally and externally to the organization.
KSA 07	Ability to communicate technical information in a clear and concise manner.	Ability to communicate technical information in a clear and concise manner.	Ability to communicate technical information in a clear and concise manner.	Ability to communicate technical information in a clear and concise manner.	Ability to communicate technical information in a clear and concise manner.
KSA 08	Self motivated, able to learn quickly, meet deadlines and demonstrate problem solving skills.	Self motivated, able to learn quickly, meet deadlines and demonstrate problem solving skills.	Ability to interface with management on a regular basis.	Advanced ability to interface with management on a regular basis.	Highly developed ability to interface with management on a regular basis.
KSA 09	Basic knowledge of application and data security concepts.	Working knowledge of application and data security concepts.	Self motivated, work independently or as part of a team, able to learn quickly, meet deadlines and demonstrate problem solving skills.	Ability to lead a team, meet deadlines and demonstrate advanced problem solving skills.	Ability to lead a team, meet deadlines and demonstrate highly developed problem solving skills.
KSA 10			Thorough knowledge of web, application and data security concepts and methods.	In-depth knowledge of web, application and data security concepts and methods.	Expert knowledge of web, application and data security concepts and methods.
KSA 11					
KSA 12					
KSA 13					
KSA 14					
KSA 15					
Environment	Campus, medical center or other university setting and various external venues.	Campus, medical center or other university setting and various external venues.	Campus, medical center or other university setting and various external venues.	Campus, medical center or other university setting and various external venues.	Campus, medical center or other university setting and various external venues.
Career Path 1	Bioinformatics Programmer 2	Bioinformatics Programmer 3	Bioinformatics Programmer 4	Bioinformatics Programmer 5	Information Technology > Supervisory

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Job Level	Entry	Intermediate	Experienced	Advanced	Expert
					and Management
Career Path 2					
Career Path 3					
Career Path 4					
Career Path 5					
Career Path 6					