

CAREER TRACKS PHASE 1
UCSD Information Technology
Family Function and Job Function Summary

Job Family	Job Function	Job Summary
Information Technology	Applications Programming	Involves in the development of server / OS / desktop / mobile applications and services including researching, designing, developing specifications for designing, writing, modifying, testing, debugging, troubleshooting and maintaining source code. Also having direct or related involvement in designing related databases, user interfaces, integration to other systems / applications, content or multimedia processes. Work includes analysis and design to post-production processes, quality assurance, maintenance and documentation.
Information Technology	Audio Visual Information Technology	Involves planning, coordinating and administering Audio Visual (AV) programs, processes, facilities and technical systems in support of education, research, conferences, events, communications or administrative activities, athletics and other purposes. Includes one or more of the following areas: technical, instructional or command media or video and audiovisual production. Works closely with and / or provides counsel to institutional representatives coordinating major projects or events.
Information Technology	Audio Visual Information Technology Engineering	Involves applying user-centered design processes, industry standards, engineering, or best practices to create, evaluate and modify designs and prototypes in support of audio visual (AV) systems design. Creates plans and specifications for highly detailed, complex AV IT projects based on clients' needs aligning design with codes, regulations and AV IT engineering best practices. Communicates to client and monitors projects. Creates documentation and specifications for third party installation teams and verifies installation work. Coordinates with other construction engineering teams, participates in building meetings and coordinates inspections.
Information Technology	Bioinformatics	Involves developing and utilizing computational tools 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.

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Information Technology	Business Systems Analysis	Involves technology-based analysis of business practices, processes and problems; developing solutions which may involve process design, data and information architecture, software development and policy or procedural changes; creating specifications for systems to meet requirements; validating requirements against needs; designing details of automated systems; developing user interface design; planning and executing unit integration and end-user acceptance testing; may develop training materials for system implementation. May lead cross-functional teams to solve complex business or systems issues.
Information Technology	Business Technical Support	Typically found in large central departments serving multiple departments or units, this family involves providing day-to-day advanced consultation, training, instruction and troubleshooting / problem-solving to technical staff and end users for hardware, software, network and related computer systems, handheld and peripheral devices and ensures their operation for individuals and groups of computer users. Analyzes, recommends, installs, configures and evaluates systems and tools for internal and end user use. Develops and conducts tests of hardware and software and reports on configurations and behavior. Develops and provides technical documentation and training. Assesses needs and recommends hardware and software acquisitions and upgrades.
Information Technology	Communications and Network Technology	Involves operation of the campus, medical center or Office of the President communications network including telecommunications. Plans, designs, develops, installs and maintains communications network systems for the campus, medical center or Office of the President or a unit.

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Information Technology	Computational and Data Science Research	Involves a hybrid of multiple computational / data / Cyberinfrastructure (CI) dominated fields such as, but not limited to, bioinformatics, geological information services (GIS), data analytics, and computational chemistry. Applies computational, computer science, data science and cyber infrastructure (CI) research and development principles, with relevant domain science knowledge, to perform research and technology integration and development. Responsibilities include research, design, development, analysis, operation, and support of high performance computing (HPC) and data science research, software, tools and hardware resources. Develops data algorithms and performs computations, statistical analyses, interpretation and reporting of research. This specialty / function exists for those positions whose primary responsibility is to do research and use computational and data science technology as a tool to accomplish the research.
Information Technology	Data Systems Management	Involves technical acumen for planning, designing, developing, implementing and administering data-based systems that acquire, prepare, store and provide access to data and metadata. Maintains and optimizes systems and migrates data and systems as needed. Ensures integrity and completeness of data and workflow, manages and / or develops data practices, databases and information systems as well as guidelines, dictionaries, registries and / or services. May include interpretation of scientific research data artifacts as well as mediation across science and technology domains and long-term data care. As information architect and data steward, designs systems, data products and / or data production processes while focusing on data curation, data exchange, data security, data integrity and information environments. (Re)evaluates frameworks, strategies, standards and standards-making activities. May involve work with a project-level data repository, a center or an archive.
Information Technology	Database Administration	Involves planning databases, including schema definition, structure, documentation, long-range requirements, data security, operational guidelines and protection. Ensures accuracy and completeness of data in master files and various support tools. May establish database management systems, standards, guidelines and quality assurance for database deliverables. This does not include technologies that are typically deemed as desktop-centric (i.e., Access, Filemaker Pro, etc.).

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Information Technology	Geographic Information Systems	Involves design, analysis, development and implementation of geographic information system (GIS), Global Positioning Systems (GPS) and other remote sensing solutions. Participates in IT projects requiring GIS data. Works with business users to define data and general GIS needs. Responsible for the development and maintenance of geospatial databases, web applications, programs and equipment.
Information Technology	Information Systems	Involves providing a variety of IT services. Assignments may include database administration, application programming, IT project management, systems administration, systems and process analysis, security, solution development and maintenance, business technical support or a combination of these and / or other IT functions. Note: If 50% or more of the position is in a defined sub-family, the position should be placed in that sub-family.
Information Technology	Information Technology Architecture	Involves conceptualization, planning, designing and implementing complete and integrated information technology solutions for campus, medical center or Office of the President initiatives, departments or the entire campus, medical center or Office of the President. Work is based on implementing the vision of top management to establish IT conceptual architecture that is time independent but allows for implementation of specific technologies over time with ability to smoothly transition technology changes. Demonstrates keen understanding of departmental, campus wide, medical center, Office of the President, institution-wide and / or multi-organizational needs and long-term goals. Researches and prototypes emerging technologies and approaches. Works on issues that impact project success or address future concepts, products or technologies. Understands and coordinates with campus, medical center or Office of the President initiatives when appropriate, as well as various IT technology standards, best practices and strategies for infrastructure growth. Often serves as consultant to related management efforts.
Information Technology	Information Technology Security	Primary responsibility involves monitoring, detecting, protecting and maintaining the security of data, systems and networks. Plans, configures, designs, develops, implements and maintains tools, systems and procedures to insure the integrity, reliability and security of data, systems and networks.

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Information Technology	Production Control	Involves scheduling, setup, submission, and monitoring production jobs to successful completion in accordance with established procedures and practices. Insures customer needs are met in a timely manner. Typically involved in the scheduling of jobs on large systems handling critical production or business data.
Information Technology	Quality Assurance / Release Management	Involves developing, evaluating, revising, applying and documenting technical quality assurance protocols, methods and test plans to inspect and test a variety of IT processes, software and products. Ensures activities and items are in compliance with both campus, medical center or Office of the President IT quality assurance standards and applicable government regulations and software / product design specifications to determine and approve software releases. Performs analysis and identifies trends in the inspection of IT processes, software and products and recommends corrective actions when necessary. Ensures that established inspection, sampling and statistical process control procedures are followed. Involved in developing, auditing, monitoring and enforcing the established release management processes and policies in support of cross-domain configuration integration, testing, completeness and consistency. May ensure compliance to UC and / or external specifications and standards.
Information Technology	Systems / Infrastructure Administration	Involves serving as the technical administrator for hardware, operating systems, and network management. Plans and coordinates the installation, configuration and testing of hardware and software components. Work may involve central or departmental computer systems and networks. Includes web systems administration.

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Information Technology	Systems Integration	Uses broad knowledge of system and software concepts, best practices, and principles as well as broad knowledge of available systems and software options from across the industry with the objective of integrating components, teams, constraints, and schedules to achieve high level system objectives. Performs system and subsystem integration, technical risk assessments, technical planning, verification and validation, and supportability and effectiveness analyses of total systems throughout the system lifecycle. Analyses are performed at all levels of total system product to include: concept, design, fabrication, test, installation, operation, maintenance and disposal. Performs functional analysis, timeline analysis, detail trade studies, requirements allocation and interface definition studies to translate customer requirements into hardware and software specifications.
Information Technology	Technical Project Management	Involves managing technical projects having a defined beginning and end. Manages the project's framework processes and methodologies involving departmental or cross-functional teams. Plans, coordinates and monitors scope, requirements, schedules, budgets, resources, tasks, risks, staff and deliverables. Monitors the project from initiation through completion. Organizes and leads activities relating to the management and completion of projects.
Information Technology	User Experience Design	Involves applying user-centered design methodologies and processes to capture user requirements, create, evaluate and modify designs and prototypes in support of software and web development. Works with all areas of IT to ensure overall consistency of technology implementation in the organization. Gathers input from users at all phases of the design process and ensures that those needs are represented in the product or service being developed. Performs usability evaluations for development teams. May produce specifications describing user requirements and internal structures for product or service in development.