

Why are we doing this, look at the article in Fermi News from Kay Van Vreede at <http://news.fnal.gov/2016/05/enter-skills-fermiworks/>

If you have questions check out our NEW FAQ's at <http://wdrs.fnal.gov/elr/performance/SkillsQA.pdf>

Skill Searching Tips

To Search, go to Edit on your toolbar and Find to search by Key Word or Advanced Options for other searching options (you may have to save the file to do a Search). You can key word search in Fermiworks as well. If you believe a skill is missing, please contact your HR Partner.

Skill Groupings and Order

ADM- Administrative including Communications, Finance, HR, Legal, Procurement, Project Management, etc.

ENG- Engineering

ESHQ- Environmental Safety, Health and Quality

FAC- Facilities

GEN- General Supervisory/Management

IT- Information Technology

SCI- Scientific

TCH- Technical

Level Definitions

Basic- You have a common knowledge or understanding of basic techniques and concepts.

Proficient- You are able to successfully complete tasks in this skill as requested. Help from an expert may be required from time to time, but you can usually perform the skill independently.

Expert- You are known as an expert in this area. You can provide guidance, troubleshoot and answer questions related to this area of expertise and the field where the skill is used.

Currently Unconfirmed (Manager's only)- Your employee may have this skill but you are unable to confirm this either due to it not being directly related to their current job or you have not been able to witness them using this skill.

| Group | Skill | Definition |
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| ADM | Accounting | Supports maintaining the books and records primarily through analysis, recording, and reporting and the application of generally accepted accounting principles, in accordance with regulations. |
| ADM | Accounting Clerical | Supports maintaining the books and records primarily through transaction processing activities, including but not limited to payroll, accounts payable disbursements, inventory, receivables and cash. |
| ADM | Administrative Support | Provides clerical/administrative assistance and support by performing duties, tasks, and assignments supporting operations or project activities. |
| ADM | Audit | Performs audits to monitor the adequacy, effectiveness and performance of the internal controls and ensure prudent business practices and compliance. |
| ADM | Communication Services | Produces written, video, multi-media, print, graphic design and photographic communication products. |
| ADM | Compensation | Develops and analyzes salary administration programs and policies. |
| ADM | Compliance | Certifies or confirms that the process meets the requirements of accepted practices, legislation, prescribed rules and regulations, specified standards, or the terms of a contract. |
| ADM | Conference and Event Organization | Plans, manages and executes major events, by identifying, assembling and organizing requirements and contacts to ensure event success. |
| ADM | Construction Procurement | Procures equipment, materials and services in support of construction activities including Reqs, RFPs, RFQs RFIs and POs. |
| ADM | Contractor Procurement | Procures services of contractors including Reqs, RFPs, RFQs RFIs and POs. |
| ADM | Control Account Management | Manages cost, schedule, and scope with overall responsibility for execution of work packages within project control accounts. Utilizes the FRA Earned Value Management System (EVMS). Performs cost and schedule management functions such as change control, variance reporting, monthly status reporting, work prioritization, estimating, and interface management. |
| ADM | Cultural Event Management | Plans activities and events related to cultural, arts and lecture programming on the Fermilab site. |
| ADM | Digital Communication | Manages communications between Fermilab and internal and external audiences utilizing digital media technology, including websites and web applications and social media tools |
| ADM | Diversity & Inclusion | Develops and implements diversity and inclusion strategies in recruitment, retention, educational pipeline programs and outreach initiatives |
| ADM | Early Childhood Education | Administers day care program for infants through kindergarten children. |
| ADM | Education | Develops and implements scientific educational programs for K through 12. |

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| ADM | Equal Opportunity | Handles discrimination complaints and cases, Affirmative Action compliance. |
| ADM | Executive Direction | Functions associated with the executive level of management. |
| | Fabrication Procurement | Procures equipment, materials and services in support of fabrication activities including Reqs, RFPs, RFQs RFIs and POs. |
| ADM | Finance Operations | Manages budget, finance & reporting for organizations; analyze and act in response to the financial reports. |
| ADM | General Administrative | General administration, coordinate and support large events. |
| ADM | Grievances & Discipline | Resolves employee conflicts and grievances, administers discipline. |
| ADM | Health Benefit Administration | Plans, develops, administers health programs. |
| ADM | HRIS | Develop, operate Human Capital Management (HCM) system and all related systems as it pertains to Human Resources data and employee recordkeeping |
| ADM | Human Resources Partner | Acts as a human resources work partner, principal contact and liaison for the Lab on a wide variety of HR functions |
| ADM | Internal Communication | Manages communications within the laboratory, including between the directorate and laboratory employees. |
| ADM | International Services | Process visas and develops programs and policies for long term assignments. |
| ADM | Knowledge Transfer Technology | Creates plans and guides for transferring knowledge from one part of the organization to another. |
| ADM | Leave Administration | Administers varying leave types: FMLA, LTD, etc. |
| ADM | Legal Contracts | Provides legal support to Laboratory management and staff concerning all aspects of contract law. |
| ADM | Legal Disputes | Provides legal support to management and staff regarding all disputes involving the Laboratory and its personnel. |
| ADM | Legal General counsel | Provides legal support to Laboratory management and staff concerning all aspects of operations. |
| ADM | Library | Supports the operation of the library, including acquisition, circulation, classification, and indexing, cataloging, research and search requests. |
| ADM | Operations Procurement | Procures equipment, materials and services in support of general operations activities including Reqs, RFPs, RFQs RFIs and POs. |
| ADM | Process Improvement/ Realignment | A series of actions are taken by a process owner to identify, analyze and improve existing business processes within an organization to meet new goals and objectives, such as increasing profits and performance, reducing costs and accelerating schedules. |
| ADM | Procurement Administration | Procures low dollar value commercial goods and services, assists with administration of subcontracts. |

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| ADM | Project Controls | Develops, analyzes, and maintains project Resource Loaded Schedules (RLS). Sets up, maintains, and reports on the project's Earned Value Management. |
| ADM | Project Cost Estimating | Develops cost estimates for large scientific and/or facility projects for use in resource loaded schedules. Prepares basis of estimate (BOE) documents outlining scope, assumptions, contingency, and basis for the costs. |
| ADM | Project Finance | Creates project charge code structures, monitors obligations and expenditures, collects actual costs and accruals, implements rate changes, and provides reports to the project team. Uses the Fermilab accounting system and works with financial information both from and outside of Fermilab. |
| ADM | Project Management | Manages project scope, cost, and schedule through establishing project objectives, coordinating project activities, leading project staff, implementing the project plan, and interacting with project sponsors and stakeholders. |
| ADM | Project Procurement | Procures equipment, materials and services in support of Project activities including Reqs, RFPs, RFQs RFIs and POs. |
| ADM | Project Risk Management | Develops and implements project risk management systems to identify, quantify, mitigate, monitor and control project risks. Performs risk analyses through the use of monte carlo or other modeling method. |
| ADM | Project Scheduling | Applies disciplined project scheduling methodologies to develop and manage schedules using enterprise scheduling tools (usually Primavera P6). |
| ADM | Project Support | Provides project management support to one or multiple projects and the project support role is in other areas than as a Project Controls, Project Finance and Project Manager. |
| ADM | Public Relations | Manages communications between the organization and the public, including local communities and members of the media. |
| ADM | Retirement Administration | Plans, develops, and administers health programs. |
| ADM | Strategic Planning | A systematic process of envisioning a desired future, and translating this vision into broadly defined goals or objectives and a sequence of steps to achieve them. |
| ADM | Talent Acquisition | Recruits, hires, and orients new employees to meet the Lab's mission. |
| ADM | Talent Management | Manages performance, skills and succession planning. |
| ADM | Training | Organizes, develops or conducts training. |
| ADM | Travel | Utilizes systems to arrange business travel for employees and users. |
| ADM | Union Negotiations | Conducts union contract administration and negotiations. |
| ADM | Wellness-Recreation | Plans, develops, and administers wellness and recreation programs. |
| ENG | Accelerator Technology | Design and build accelerator machines, beamlines, and tunnels. Skilled at laying out machine elements, alignment concerns, remote positioning techniques, and overseeing installation. |

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| ENG | Advanced Mechanical Analysis/FEA | Computational Fluid Dynamics, complex Multiphysics analysis, cryogenic fluid dynamics analysis. |
| ENG | Analog ASIC | Design and oversee fabrication of integrated circuits used in analog applications (experiment data acquisition) |
| ENG | Architect | Perform site planning, space planning and facility design for personnel and experiments. |
| ENG | Beam instrumentation | Design and oversee construction of systems for monitoring beam characteristics profile, intensity, position, etc. |
| ENG | Chemical Systems | Design and analyze chemical processes and systems such as electropolishing and chemical etching. Also includes skills involved in water treatment and polymer blending for detector components. |
| ENG | Civil Engineer | Perform site planning, wetland mitigation and design of roads, parking, utilities and grading; shielding design and documentation. |
| ENG | Components Cryogenic Components | Design cryostats and cryogenic transport systems for superconducting magnetic and RF devices. |
| ENG | Controls Engineer | Direct digital controls for building management systems. |
| ENG | Cryogenic Process Systems | Analyze and design cryogenic process systems. Develop heat load estimates and modify process cycles to match system requirements. Skilled in operations and commissioning of cryogenic systems. |
| ENG | Cryogenic Safety Analysis | Testing and operational requirements, including ODH |
| ENG | Data Acquisition | Design and oversee construction and integration of systems to provide control or data acquisition for accelerators or experiments |
| ENG | DC Power Supply and Distribution | Design and oversee the installation of DC Power supplies with respect to AC supply distribution and magnet distribution. |
| ENG | Detector Technology | Design and build HEP detectors and associated systems. Skilled at conceptual and detailed design of common detector sub-system technology such as silicon tracking and calorimetry. |
| ENG | Digital ASIC | Design and oversee fabrication of integrated circuits used for digital applications (Digital Signal Processing, Clock systems, etc. |
| ENG | Electrical Engineer- Facility | Design of site wide high & medium voltage and facility medium & low voltage power distribution. |
| ENG | Electrical Engineer- Operations & Maintenance | Operation/maintenance of site wide high & medium voltage and facility medium & low voltage power distribution. |
| ENG | Embedded processing | Design and oversee construction, testing and programming of microprocessors used in embedded portions of data acquisition systems |

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| ENG | Environmental Engineer | Perform studies on hazardous-waste management, environmental impacts, water/wastewater supply and treatment, air pollution and interfacing with environmental governing bodies such as EPA and local governments. |
| ENG | Experiment Cryogenic Components | Design cryostats and cryogenic transport systems for particle physics experimental systems. |
| ENG | Fire Protection Engineer | Design of facility fire detection/suppression systems; life safety studies, code compliance. |
| ENG | Flexible and Hybrid Circuits | Design and oversee construction of hybrid circuits used in detector systems |
| ENG | Fluid/Pressure Systems | Design, fabricate and operate small and large fluid and gas systems and components including code stamped vessels, piping, pump sizing, heat and mass transfer and a working knowledge of applicable codes and standards such as ASME BPV code and ASME B31 piping code series. |
| ENG | General Mechanical Design | Design and fabricate mechanical components and systems including familiarity with machine elements, strength of materials, theoretical applied mechanics, heat and mass transfer, material failure criteria, and industrial fabrication techniques and methods. |
| ENG | Geodesy | Trained in applying all aspects of Geodesy for long baseline experiments, least squares analysis of control networks and beamline design. |
| ENG | Geomatics | Trained in applying the proper tools and methodology for large scale accelerator metrology with a very good understanding of control network measurements and the effects of instrument errors. Geomatic engineers gather, store, process and deliver geographic information, or spatial reference information. It requires the utilization of products, services and tools involved in the collection, integration and management of spatial data. |
| ENG | High-level RF Engineer | Design and oversee construction of the High Power RF systems for Accelerators |
| ENG | High-speed Digital | Design and oversee the implementation of high speed processing systems used for direct control of high speed feedback systems (stochastic cooling, beam dampers etc.) |
| ENG | High-voltage AC Distribution | Design, specify and monitor AC distribution systems. 345KV, 13.8KV, 480V typically used on site. |
| ENG | Instrumentation/Controls | Work with sensors, electronics, electromechanical devices, etc. for measuring, monitoring, and controlling processes and performance of devices during fabrication, testing, and use. |
| ENG | Low-level RF Engineer | Design and oversee construction of low power, high speed systems to control RF to be applied to Accelerators |
| ENG | Low-noise Analog | Design and oversee the implementation of systems used to acquire signals from accelerator or experimental detectors |

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| ENG | Magnet Design Engineer | Design, specify and oversee construction of magnets used in accelerators, beam transport lines and for pulsed power applications. |
| ENG | Magnet Systems Power Supply | Design, specify and oversee construction of DC High Current, High Precision power supplies used in accelerators and beam transport lines. |
| ENG | Material Science | Work with material behavior and failure in various loading and exposure environments. Can include knowledge of common metals and plastics as well as more exotic materials and ceramics, fracture mechanics, materials testing, and rate dependent processes such as creep. Can include science of materials joining techniques such as welding/brazing/diffusion bonding/adhesives. |
| ENG | Mechanical Analysis/FEA | High level analytical skills required to build analytic or numerical models to simulate complex and/or coupled field analyses of challenging mechanical engineering problems. Usually involves FEA skills, especially involving coupled field analysis (electro-thermal-structural), elastic-plastic analysis, and time/rate dependent analysis. Skilled at the magnetic design of devices using analytical and computational tools to model DC and AC performance. |
| ENG | Mechanical Engineer- Facility | Design of site wide process and domestic water systems; facility HVAC systems; control systems. |
| ENG | Mechanical Engineer- Operations and Maintenance | Operation/maintenance of site wide process and domestic water systems; facility HVAC systems; building control systems. |
| ENG | NC Magnets | Design normal conducting magnetic devices with high current carrying elements, high voltages, vacuum, and water cooling. Magnetic devices may operate DC, ramped, pulsed, or faster. |
| ENG | Operational M&D | Operate, maintain, and upgrade operational systems and equipment including troubleshooting, crisis management, problem solving, and other "in the field" talents. Still requires good working/engineering knowledge of the systems and equipment. |
| ENG | Process Control | Design and oversee the implementation of PLC systems used in processes for monitoring and control |
| ENG | Production Engineer | Supply chain management, assembly facility operation, production activity coordination |
| ENG | Project System Engineering | |
| ENG | Pulsed Power | Design, specify and oversee construction of pulsed power systems such as Kickers or Modulators. |
| ENG | Quality Assurance | Trained and certified in Quality Assurance techniques including developing procedures and controlling associated data. |
| ENG | RF Structure and Design Measurements | Design and development of RF cavities (NC and SC), RF couplers, RFQ's, HOM Dampers, etc. |

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| ENG | Safety Interlock System | Design and oversee construction of the Machine and Personnel Safety systems used to ensure safe operations. |
| ENG | SC Magnets | Design superconducting magnetic devices with high precision mechanical components, current carrying elements, high voltages, vacuum, and cryogenic cooling. |
| ENG | SC Materials Science | Work with electromagnetic, mechanical, and thermal behavior of superconductors in various environments of temperature, electric and magnetic fields, and mechanical loading, including the extension of behavior beyond the boundaries of the superconducting state. Can include knowledge about practical metallic and composite superconductors, their methods of manufacture, and their constituent components and structures. Can include knowledge about the physics of superconductivity and the relationships between properties, components, and structures in different environments. |
| ENG | SRF Processing Engineer | Cavity processing facility development and operation, processing treatment development, chemical handling, cleanroom technology, ultrapure water technology |
| ENG | SRF Systems | Design superconducting RF cavities, feedthroughs, and associated components for SRF systems. |
| ENG | Structural Design | Design and fabricate large load bearing structures and equipment using applicable codes and standards such as the AISC ASD. Requires knowledge of common construction and fabrication practices. |
| ENG | Structural Engineer | Design of building and underground enclosure structures. |
| ENG | System Integration | |
| ENG | Target Technology | Design HEP target and focusing systems and components including Radioactive Component Handling techniques and procedures. Includes design and construction of components and systems that can survive the high energy density, temperatures, radiation, and pulsed nature of HEP targets. |
| ENG | UH Vacuum | Design and fabricate ultra-high vacuum systems and components compatible with particle free, ultra high vacuum requirements. Includes everything from out gassing calculations and pump sizing, to RGA analysis and clean room procedures. |
| ESHQ | Air Pollution Control | The techniques employed to reduce or eliminate the emission into the atmosphere of substances that can harm the environment or human health. |
| ESHQ | Chemical Waste Handling | Procedures to prevent injury and minimize environmental health hazards for chemical waste. |
| ESHQ | Continuity Plan Development | The management process that identifies risk, threats and vulnerabilities that could impact an entity's continued operations and provides a framework for building organizational resilience and the capability for an effective response. |

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| ESHQ | Ecological Restoration | The practice of repairing damaged lands and waters. |
| ESHQ | Electrical Safety Evaluation | Electrical systems and components are required to meet national certification or listing standards to ensure proper and safe operation during their entire life. |
| ESHQ | Electrical Safety Systems | Systems designed and installed to prevent damage to equipment and/or personnel injury in the event of improper operation or component failure. |
| ESHQ | Emergency Drills | Table-top, evacuation, or "take shelter" exercises that prepare building occupants to respond properly to a variety of emergency situations in their work environment. |
| ESHQ | Emergency Medical Care | Immediate medical care administered to workers or the general public at the scene of an accident to deal with injuries prior to and/or during transport to a hospital or other medical facility. |
| ESHQ | Environmental Assessment/NEPA Reviews | National Environmental Protection Act assessment of the environmental consequences (positive and negative) of a plan, policy, program or project prior to the decision to move forward with the proposed action. This includes a review of purchases for compliance with NEPA requirements. |
| ESHQ | Environmental Sampling | The testing of hazardous waste sites, runoff into lakes, streams and rivers, and air emissions, etc. |
| ESHQ | Ergonomic Analysis | The application of information on physical and psychological characteristics to the design of devices and systems for human use |
| ESHQ | Groundwater Protection | Protection of the water that is located below the surface of Earth, where it occupies all or part of the void spaces. |
| ESHQ | Hazard Assessment Documents (HAD) | The process of identifying the hazards associated with defined task, prescribing personal protective equipment and other relevant protection measures which must be employed to reduce the risk from the hazards. |
| ESHQ | Hazardous Materials Response Operations | Clean-up operations required by a governmental body, whether Federal, state local or other involving hazardous substances that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA NPL, and initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained. |

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| ESHQ | Human Performance Improvement Analysis | A process improvement methodology focused on improving performance at the societal, organizational, process, and individual performer levels. |
| ESHQ | Incident Command and Control | A standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can be effective |
| ESHQ | Industrial Hygiene Sampling | Evaluation, prevention, and control of those environmental factors or stresses arising in or from the workplace which may arising in or from the workplace which may cause sickness, impaired health and well-being or significant discomfort among being, or significant discomfort among workers or among citizens of the community |
| ESHQ | Land Management | Process of managing the use and development (in both urban and rural settings) of land resources. Land resources are used for a variety of purposes which may include organic agriculture, reforestation, water resource management and eco-tourism projects. |
| ESHQ | Laser Safety Systems | Design, use, and implementation of laser safety procedures and personal protective equipment to minimize the risk of laser accidents, especially those involving eye injuries. |
| ESHQ | Lectora Training Program | Lectora E-Learning is a program used to develop and present interactive training programs on a standard platform. |
| ESHQ | Occupational Medicine | Branch of clinical medicine most active in the field of occupational health. OM specialists work to ensure that the highest standards of occupational health and safety can be achieved and maintained. |
| ESHQ | Pre-incident Planning | Plan to help responding personnel effectively manage emergencies with available resources. Pre-incident planning involves evaluating the protection systems, building construction, contents, and operating procedures that can impact emergency operations." |
| ESHQ | Radiation Interlock Design and Operation | The design, construction, installation, and periodic testing of interlock systems to protect personnel from the effects of ionizing and non-ionizing radiation produced by equipment such as particle accelerators, X-ray machines, or lasers. |
| ESHQ | Radiation Protection Design Study | A comprehensive evaluation of measures employed to protect personnel, the environment, and equipment from injury, degradation, or damage from exposure to radiation. |
| ESHQ | Radiation Surveys | Examine radioactive components, operating beamlines, and/or maintenance operations using a variety of survey instruments with complete documentation of the readings and results. |

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| ESHQ | Radioactive Sample Analysis | Preparation and handling of solid or liquid samples that are analyzed for the presence of radioactive isotopes. |
| ESHQ | Radioactive Waste Handling | Proper techniques to safely collect, segregate, package, store and/or dispose of radioactive or contaminated waste in solid, liquid, or gaseous form. |
| ESHQ | Risk Management | Identification, assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risk management's objective is to assure uncertainty does not deflect the endeavor from the business goals. |
| ESHQ | Shielding Calculations | A process to determine the amount and type of shielding required to safely operate an accelerator while protecting personnel, the environment, and installed equipment. |
| ESHQ | Smoke Control and Management | Smoke containment and smoke management systems that are designed to control the movement of smoke within a facility and mitigate the impact of smoke from a fire. |
| ESHQ | Solid Waste Management Units | An area with known hazardous wastes or hazardous waste constituents that must be monitored, contained, and treated prior to release into any environmental medium. |
| ESHQ | Technical Rescue Operations | Aspects of saving life or property that employ the use of tools and skills that exceed those normally reserved for firefighting, medical emergency, and rescue |
| ESHQ | Waste Minimization Programs | Program designed to reduce the amount, to the extent feasible, of hazardous waste that is generated prior to treatment, storage and disposal. Practices that are considered waste minimization include recycling, source separation, product substitution, manufacturing process changes, and the use of less hazardous raw materials. |
| ESHQ | Water Pollution Control | Using approved techniques and technology to control waste water, including contaminated groundwater, prior to discharge into a public waterway. |
| FAC | Building Services | Perform building management activities to identify, procure, request, perform and coordinate delivery of maintenance and services to tenants. |
| FAC | Business Administration | Provide business management to all functions. |
| FAC | Carpenter | Perform and coordinate carpentry type or related services. |
| FAC | Communications/Dispatcher | Answers phones and dispatches Fire Department and Security. |
| FAC | Construction Coordinator | Manage and oversee conventional facility construction projects. |
| FAC | Driver | Transports materials. |
| FAC | Facilities Mgmt. | Real property management activities for buildings and infrastructure. |
| FAC | Firefighter | Responds to fire alarms/emergency situations and checks fire protection systems. |

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| FAC | Geographic Information System | Develops, operates, and maintains mapping applications and tools in the Fermilab Geographic Information System (GIS). |
| FAC | Groundskeeping | Upkeep and management of natural resources, herbicide application, maintenance of roads, parking lots, and ditches, winter safety activities. |
| FAC | Housing/ Accommodations | Provide housing accommodations to users/visitors. Manage Food Services. |
| FAC | Logistics | Provide Shipping, Receiving, transportation of goods, and Mailroom Services. |
| FAC | Maintenance | Perform or coordinate upkeep and preservation of real property assets including specialized repair and maintenance activities. |
| FAC | Material Services | Inventory and control of government owned personal property. |
| FAC | Mechanic | Maintenance and repair of motor vehicles. |
| FAC | Security | Provide Site-wide security/emergency response. |
| FAC | Telecommunication | Coordinate site-wide telecom/radio/paging services. |
| GEN | Group Leader Administrative Support Staff | Leads a group of administrative support personnel, does not complete the performance reviews or initiate discipline or job changes for employees. |
| GEN | Group Leader Professional Staff | Leads a group of Professional personnel, does not complete the performance reviews or initiate discipline or job changes for employees. |
| GEN | Group Leader Technical Staff | Leads a group of Technical personnel, does not complete the performance reviews or initiate discipline or job changes for employees. |
| GEN | Supervisor/Manager Administrative Support Staff | Supervises/Managers administrative support personnel and does complete performance reviews and initiate discipline or job changes for employees. |
| GEN | Supervisor/Manager Professional Staff | Supervises/Managers professional personnel and does complete performance reviews and initiate discipline or job changes for employees. |
| GEN | Supervisor/Manager Technical Staff | Supervises/Managers technical support personnel and does complete performance reviews and initiate discipline or job changes for employees. |
| IT | Accelerator Modeling Research | Perform research, design, development and support of algorithms and methods for modelling of current and future particle accelerators. |
| IT | Active Directory | Design, configure, commission, maintain, support and operate Active Directory systems. Create, maintain, support and operate integration of Active Directory components with other authentication systems. |
| IT | Applications Architecture | Convert business use cases and functional needs to technical requirements and develop a high level functional system view. Review technology options and provide guidance on design principles to be used in developing an application design. |
| IT | Authentication Systems | Configure, maintain, operate and support various authentication systems and associate integrations, applications and functions. |
| IT | Availability Management | Define, plan and monitor the availability targets for one or more services. |

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| IT | Beam Simulations Research | Perform research, design, development and support of algorithms and methods for simulating beams in particle physics accelerators. |
| IT | Big Data Technologies | Research, develop, deploy solutions for experiments based on state of the art big data technologies - including SPARK, Hadoop, Couchdb, and nosql databases, |
| IT | Business Functional Analysis | Convert the business functional needs and use cases of the client into business requirements. Translate business concepts into technical language and vice versa. Assist technical experts in converting business requirements into technical requirements and design constraints. |
| IT | Business Intelligence | Architect, design and build infrastructure, applications, and interfaces to support processes for analyzing and presenting data for decision making at all management levels of an organization. Operate, manage and support business intelligence systems. |
| IT | Business Relationship Management | Understand, communicate, and ensure the business needs are understood and supported by the technical services and support organizations. |
| IT | Business Reporting | Design, build and support business-centric reports using for all levels of management. |
| IT | Business Systems Administration | Configure, maintain, operate and support business system environments and system management tools, infrastructure and integration with other systems. Includes adherence to baselines and standards in general as well as specific compliance requirements for business systems. |
| IT | Capacity Management | Define, plan, and monitor current service and service component capacity levels and usage. |
| IT | Change Management | Manage the lifecycle of creating and releasing changes to services in the production environment. Ensure proper communications, testing and alignment with business needs actions have been performed. |
| IT | Cloud-based Systems Administration | Configure, maintain, monitor, test upgrades, manage, and assign licenses for service instances and associated workflows and integrations. |
| IT | Communication Management | Provide effective, consistent, accurate and timely information is shared with the appropriate audiences and presented at the proper technical level for the targeted audience. |
| IT | Computational Science | Research, architect, develop and deploy computationally based capabilities that are then used for solving scientific problems - including data acquisition, data processing and analysis. |

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| IT | Configuration Management | Collect, maintain, review and provide infrastructure information in support of the organizational mission. Maintain Configuration Database and functions. |
| IT | Content Management Applications | Design, develop, operate and support tools and applications that provide content management. |
| IT | Content Management Infrastructure | Configure, maintain, operate and support content management environments, tools, infrastructure and integrations with other systems. Includes adherence to baselines and standards. |
| IT | Content Management Site Design | Design, configure, and support display of content on content management systems, including standard and custom templates and based on end-user requirements. |
| IT | Continuity Management | Develop, maintain and review plans to recover a service if a serious incident should occur. Ensure service providers have up to date continuity plans. Perform period reviews and exercises of continuity plans. |
| IT | Data Flow | Research, architect, design, develop and deploy capabilities based on Multi-core-data flow methodologies and techniques that are then used for solving large scale scientific data processing and analysis problems. |
| IT | Data Parallelism | Research, architect, design, develop and deploy capabilities based on Multi-core-data parallelism methodologies and techniques that are then used for solving large scale scientific data processing and analysis problems. |
| IT | Data Science - Deep Learning Research | Research, architect, design, develop and deploy capabilities based on Deep Learning methodologies and techniques that are then used for solving large scale scientific data processing and analysis problems. |
| IT | Data Science Analytics Research | Research, architect, design, develop and deploy analytic solutions that are then used for solving large scale scientific data problems - including data acquisition, data processing and analysis. |
| IT | Data Storage Systems | Architect, design, develop and deploy storage services for large scale scientific data |
| IT | Database Administration | Create, maintain, tune and support database schemas and related functions. Maintain, operate, tune and support database systems and associated technologies for data integrity and preservation. |
| IT | Database Applications | Create, maintain, tune and support application code for databases and associated schemas. Translate requirements into a database application design and user interface. |
| IT | Detector Simulations | Research, design, develop and support computationally based simulations of particle physics detectors. |
| IT | Distributed Systems | Design, build, maintain, support, integrate and operate components of a distributed system. Diagnose asynchronous issues involving components of a distributed system in a heterogeneous environment |

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| IT | DNS | Configure, maintain, operate and support DNS servers. |
| IT | Email | Configure, maintain, operate and support email and calendaring services including client applications and integration with other systems. |
| IT | End User Support | Interact with users and customers to understand their issues and restore services to the agreed upon level for the service. |
| IT | Enterprise Architecture | Reviews current technologies and trends, ensures services align with current and future strategic vision of the organization. |
| IT | Federated Identity Services | Configure, maintain, support and integrate systems that link electronic identities and attributes stored in multiple distinct management systems. |
| IT | Financial Management | Manage organization's budgeting, accounting and charging processes. Review budgeting, accounting and charging processes and activities for adherence to guidelines. |
| IT | HEP Theory Modeling | Research, design, develop and support computationally based theoretical models of particle physics and astrophysics. |
| IT | High Performance Network Research | Research into high performance next generations networks in support of particle physics and astrophysics. |
| IT | High Performance Systems | Integration, deployment and support of high performance computing systems in support of particle physics and astrophysics. |
| IT | Incident Management | Manage the lifecycle of Incident investigations. Investigate service disruptions and degradations with the aim to restore service as quickly as possible. |
| IT | Information Security | Analyze threat notifications, assess risk profiles and design mitigation strategies for non-threats. Define requirements and use cases for monitoring IT assets for adherence to computer security policies. Review risk assessments for services provided by the organization. Interface with governance bodies on computer security related matters. |
| IT | Information Security Incident Analysis | Review potential computer security Incidents for accuracy. Determine if reported incident is real or a false alarm. Perform forensic analysis on systems and assess potential for wider impact. Recommend action for specific instance and any additional mitigations or corrective actions to reduce or eliminate future risk. |
| IT | Integrated Systems | Design, build, configure and support infrastructure and applications to allow various distinct systems to interact. |
| IT | Kerberos | Configure, maintain, operate and support Kerberos systems and client applications. |

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| IT | Knowledge Management | Manage the lifecycle of technical knowledge and information within the organization. Support the efficient, accurate, and timely sharing of information between various entities within the organization. |
| IT | Large Scale Data Handling | Architect, integrate, deploy and maintain hardware and software components and services for up to exa-byte scale data handling. |
| IT | Linux Systems Administration | Configure, maintain, operate and support Linux system environments and system management tools, infrastructure and integration with other systems. Includes adherence to baselines and standards. |
| IT | Mobile Devices | Design and support applications and environments for mobile devices. |
| IT | Networks | Architect, integrate, deploy and maintain internal and external network fabrics, hardware and software components and services. |
| IT | Office Productivity Clients | Configure and support office productivity applications. Provide guidance and informal training on office productivity applications. |
| IT | OSX Systems Administration | Configure, maintain, operate and support OSX system environments and system management tools, infrastructure and integration with other systems. Includes adherence to baselines and standards. |
| IT | Physics Algorithms | Research, architect, design, develop and maintain algorithms and methods for physics experiments simulation, real-time triggering, reconstruction and analysis. |
| IT | Problem Management | Manage the lifecycle of Problem investigations. Lead, contribute to and perform root cause analyses. Troubleshoot, diagnose and document issues in a variety of systems. Propose workarounds and solutions to mitigate or remove system flaws. |
| IT | Program Management | Manages IT projects and operations of an enterprise-wide nature for a service area. Plans, develops and maintains roadmap, manages work, reviews designs, directs operations activities, informs sponsors on status of operations and development activities. |
| IT | Project Management | Define, plan, oversee and monitor the lifecycle of a project to deliver IT related functionality to the organization. Interact with vendors and internal organizations to ensure all aspects of the project process are properly executed. |
| IT | Real-time Software | Configure, maintain, operate and support Real-time system environments and system management tools, infrastructure and integration with other systems. Includes adherence to baselines and standards. Create, maintain and support code with locks, time budgeting and priority considerations. |
| IT | Release Management | Plan, schedule and control release of technological changes into test and live environments. |

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| IT | Root Cause Analysis | Perform, lead, and contribute to an analysis of a complex system to determine the underlying system flaw, and contributing factors, that resulted in, or amplified the impact or duration of, a service degradation or outage. |
| IT | Scientific Data Analysis | Design, develop, operate and support software tools and solutions for scientific data analysis. |
| IT | Scientific Frameworks | Design, develop, operate and support software frameworks for scientific data acquisition, reconstruction, analysis and simulation. |
| IT | Scientific Functional Analysis | Perform functional and business analysis for scientific systems and applications. |
| IT | Scientific Services Security | Provide expert consulting and guidance in security for the design, development, operations and support of scientific. |
| IT | Scientific Software | Design, develop, operate and support software components and tools in support of scientific computations. |
| IT | Scripting | Create, maintain and support code, using an interpreted language, to perform a function, provide applications and systems. |
| IT | Security Management | Ensure confidentiality, integrity and availability of information and data, and associated IT services, within the organization environment. |
| IT | Service Level Management | Ensure the organization is providing services at agreed upon levels. Assist in negotiating and defining the service levels for services provided by the organization. Review agreements with third party vendors to ensure support levels are consistent with service levels promised by the organization. |
| IT | Service Management | Ensure services are clearly defined and provided in a manner aligned with the customer needs and organizational mission needs. |
| IT | Service Operations Management | Oversee IT service operations for an organization. Responsible for maintaining services are running nominally. Interacts with service providers and support teams on operational issues. |
| IT | ServiceNow | Configure, maintain, operate and support the ServiceNow instances. Create, maintain and support code within our integrating with the ServiceNow platform. |
| IT | Software Collaboration Tools | Design, develop, operate and support tools that provide collaboration services. |
| IT | Storage Systems | Design, build, maintain and support data storage systems for local and remote access, and data preservation and recovery. |
| IT | Supplier Management | Ensure contractors are fulfilling contractual requirements and contractors and suppliers are meeting the business needs. |
| IT | Technical Writing | Produce documentation and communications at the appropriate technical level for the intended target audience. |

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| IT | Thread Parallelism | Design, build, maintain, and support code for performing tasks efficiently in a multi-threaded, or similar, parallel processing environment. Analyzes requirements and use cases to determine opportunities for fulfilling all, or part, of them using a parallel processing architecture. |
| IT | Video Conference | Design, install, configure and support video conference room systems. Provide user support for video conferencing applications. |
| IT | Virtual Systems | Design, build, configure and support VM infrastructure for delivering virtual servers and desktops as a service. |
| IT | VOIP | Install, configure and support VOIP infrastructure and end user equipment. |
| IT | Web Systems | Design, build, maintain and support web platforms as a service. Provide consultation services for web administrators on design and baseline adherence. |
| IT | Windows System Administration | Configure, maintain, operate and support Windows system environments and system management tools, infrastructure and integration with other systems. Includes adherence to baselines and standards. |
| IT | Windows Systems | Configure and support Windows systems for special purpose needs. Review third party vendor requirements for installation, operation, and integration and assess compatibility with baseline requirements. |
| IT | Workflows | Create flowcharts to implement processes based on requirements, scenarios and use cases. Design, create, maintain, support and operate workflows for automating processes based on flowcharts. |
| SCI | Accelerator operation | |
| SCI | Accelerator performance analysis & optimization | |
| SCI | Application of accelerator instrumentation | |
| SCI | Application of statistical and numerical mathematical methods | |
| SCI | Astro-particle physics, cosmology | |
| SCI | Beam injection and extraction methods, beam transfer and dumping | |
| SCI | Beam production and Sources | |
| SCI | Beam-machine interaction simulation | |
| SCI | Calorimetry methods and techniques | |
| SCI | Computational and mathematical physics | |
| SCI | Design and development of beam sources | |

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| SCI | Design and development of detectors for biomedical applications | |
| SCI | Detector assembly and integration: techniques, procedures and coordination | |
| SCI | Detector design, construction, testing and operation | |
| SCI | Detector performance simulation and analysis | |
| SCI | Development of HEP data processing frameworks | |
| SCI | Experimental data reduction and triggering | |
| SCI | Gas based particle detection technologies | |
| SCI | High level RF expertise | |
| SCI | Horn design and optimization | |
| SCI | Image analysis, visualization and simulation techniques and tools | |
| SCI | Impedance computation | |
| SCI | Knowledge of accelerator feedback and damper systems | |
| SCI | Knowledge of accelerator physics theory | |
| SCI | Knowledge of beam optics (rings and transfer lines) | |
| SCI | Knowledge of biomedical physics | |
| SCI | Knowledge of collective effects (beam-beam, space charge, cooling) | |
| SCI | Knowledge of longitudinal single-particle dynamics | |
| SCI | Knowledge of nuclear reactions | |
| SCI | Knowledge of nuclear structure | |
| SCI | Knowledge of Radioactive decay and spectroscopy | |
| SCI | Knowledge of transverse single-particle dynamics | |
| SCI | Liquid based particle detection technologies | |
| SCI | Low level RF expertise | |

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| SCI | Machine integration for setting magnet parameters and higher order fields | |
| SCI | Magnetic model used in accelerator operation | |
| SCI | Methods and tools for collaborative software development | |
| SCI | Magnet Science | Engages in physics research related to magnet design and development. |
| SCI | Material Science | Understanding the physical, chemical, and engineering principles behind the materials used in the design and operation of particle accelerator components; performs calculations, structural and electronic characterizations, and property measurements of relevant materials, with scope ranging from fundamental studies to complex processes. |
| SCI | Neutronics | |
| SCI | Nuclear reaction modelling | |
| SCI | Optical particle detection technologies | |
| SCI | Particle identification and tagging methods and techniques | |
| SCI | Particle physics, phenomenology | |
| SCI | Particle tracking methods and techniques | |
| SCI | Physics analysis | |
| SCI | Physics reconstruction | |
| SCI | Physics simulation | |
| SCI | Plasma acceleration and focusing | |
| SCI | Primary beamline design | |
| SCI | RF Science | Development and application of RF technologies including particle acceleration, beam diagnostics, microwave detection for particle-astrophysics detector. |
| SCI | Secondary beam line design | |
| SCI | Simulation and design of imaging, illumination or laser optics | |
| SCI | Simulation and design of laser-based systems | |
| SCI | Simulation and design of X-ray-based systems | |

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| SCI | Simulation of radiation environments | |
| SCI | Solid-state based particle detection technologies | |
| SCI | Synchrotron radiation generation | |
| SCI | Target design and optimization | |
| TECH | 2D CAD General Design | Creation of 2D CAD production drawings and layouts |
| TECH | 3D CAD General Design | 3D solid part and general assembly modeling |
| TECH | Accelerator Component Fabrication | Build, assemble and test precision accelerator beam component, e.g. pulsed magnets, ions sources, beam pipes, vacuum assemblies |
| TECH | Accelerator Operations | Operate the accelerator on a 24x7 basis |
| TECH | Accelerator, Facility, and Systems Operations | Responsible for the operation of accelerators, major systems, or a facility. Has in depth knowledge of the accelerator, system, or facility and is regarded as the operations expert. Helps in solving technical problems with the accelerator, system, or facility |
| TECH | Alignment | Use optical and laser tracker surveying equipment to measure and align devices an layout coordinate systems |
| TECH | Alignment Coordinator | Provides oversight to alignment activities, lays out coordinate systems and global alignment strategies and performs numerical translations of collected data |
| TECH | Analog development | Assemble, checkout, troubleshoot, install and maintain analog electronics |
| TECH | Beam Physicist | Responsible for the design, modeling, construction, commissioning, or operation of beamlines or accelerators or their major components. |
| TECH | Building Management | Manage the maintenance, functionality, and safety systems inside a building or facility. |
| TECH | Circuit board assembly | Solder electronic components to printed circuit boards |
| TECH | Clean Room Assembly | Trained and experienced in working in a clean room environment, including operation of Leak Detection and Residual Gas Analysis equipment. Provide skill in selection of material, cleaning, packaging, vacuum degassing, and leak detection. Able to work in a class 100 or better clean room environment |
| TECH | Complex Assemblies / Weldments | Coordinate or layout complex assemblies and systems. Design and document welded assemblies |
| TECH | Computer programming | Write programs for embedded processing and FPGA applications |
| TECH | Construction Management | Provide oversight and knowledge of construction contracts |
| TECH | Conventional RF Cavity Assembly or Repair | Provide skill in the transport, electrical or hypot measurement, ultra sonic cleaning, rinsing, assembly, brazing, tuner assembly and testing, vacuum leak detecting, fluids flow path and capacity testing, RF surface fit, and RF leak detecting and repair |
| TECH | Crew Leader | Lead a repair or installation team providing the necessary technical guidance. |

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| TECH | Cryogenic Design | Design and document cryogenic devices, system components, piping layouts and P&ID |
| TECH | Cryogenic Fabrication / Operation | Skilled at fabrication of cryogenic components and/or operation and maintenance of cryogenic refrigeration systems. |
| TECH | Detector Component Fabrication | Build, assemble, and test precision particle detector components such as silicon and pixel mechanical systems, delicate wire chambers, or other intricate detector systems |
| TECH | Detector Physicist | Responsible for the design, modeling, construction, commissioning, or operation of particle or beam detectors or their major components. |
| TECH | Detector Technology | Design complex detector systems including silicon tracking detectors, calorimeters and chambers |
| TECH | Digital development | Assemble, checkout, troubleshoot, install and maintain digital electronics |
| TECH | Electrical drafting | Prepare detail drawings for applications such as electrical power distribution, electrical panel menus, single-line electrical drawings |
| TECH | Electrical General Design | Provide high level electrical design for electrical equipment, power sources, cable routing, controls and PC boards |
| TECH | Electrical Task Management | Provide oversight and knowledge of electrical contracts |
| TECH | Electro-mechanical drafting | Prepare detail drawings for infrastructure items such as chassis, panels, cables, and enclosures |
| TECH | Electro-mechanical fabrication | Fabricate and assemble infrastructure items such as cables, chassis, panels and enclosures |
| TECH | Electronics repair | Troubleshoot and repair broken electronics equipment |
| TECH | Engineering Physicist | Utilizes a fundamental knowledge of physics, together with problem-solving skills and an understanding of engineering, to design or operate moderately complex components and systems. Has proficiency in the use of some of the following: modern analytical tools, software and hardware development, integration and testing, design of microelectronic circuitry, and the physics principles used in key modern scientific, chemical, and mechanical and/or engineering applications evaluating analytic solutions to problems through engineering or physics based computations. |
| TECH | Experimental Operations | Operates cryogenic systems for particle physics experiments, assists experimenters in implementation of operations systems and in operational liaison. |
| TECH | Fabrication | Prepare requisitions, identify possible vendors and work with Fermilab Procurement Dept. to complete the procurement process. Serves as point of contact for vendors. Monitors progress of contracts and reports on status. Makes vendor QC inspections and is the person responsible for assuring the fabrication process is completed properly. |
| TECH | Fire Protection Technician | Operation/testing/maintenance of facility fire detection/suppression systems. |

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| TECH | Flexible & hybrid circuit layout | Implement the layout for the interconnecting copper traces for flexible and hybrid circuits |
| TECH | High Vacuum Technician | Provide skill in selection of material, fabrication cleaning, vacuum degassing, leak detection, clean assembly. Provide skill in setup, cleaning, assembly, installation, and test components by helium , solution film, and ultrasonic leak detection. |
| TECH | Instrumentation/Controls | Skilled at mounting instrumentation, installing controls and measuring magnets, RF cavities, and other devices using custom equipment. |
| TECH | Low or rough Vacuum Technician | Provide skill in setup, cleaning, assembly, test components by helium , solution film, and ultrasonic leak detection, and operation of vacuum system. |
| TECH | Machining | Provide on site machining of parts and repairs to existing components |
| TECH | Magnet Design | Design superconducting or normal conducting magnet coil packages, mechanical systems and cryostats |
| TECH | Material Handling | Move material safely and efficiently. Operation cranes and forklifts. Handle highly controlled manual or remote manipulation and/or repair of radioactive components and systems. Assemble parts kits and take inventory |
| TECH | Mechanical Assembly - delicate | Fabricate and assemble delicate mechanical devices using hand tools and dedicated tooling. Follows, helps develop, and documents procedures. |
| TECH | Mechanical Assembly - heavy | Fabricate and assemble big mechanical devices using hand or power tools and dedicated tooling. Follows, helps develop, and documents procedures. |
| TECH | Mechanical Task Management | Provide oversight and knowledge for mobile crane setup, piping or mechanical installation contracts. Creates hazard analyses, work permits, organizes julie searches, completes T&M requisition and monitors cost. |
| TECH | Non-cryogenic liquid or gas piping systems | Repair, maintenance, installation, or operation of a variety of non-cryogenic liquid or gas systems, heat exchangers, associated piping and controls. Brazing, fabrication, and welding set up, repair or rebuilding of pumps or pump motors, rebuilding air compressor pumps, relief valve service and inspection. May include maintenance or operation of de-ionization and/or radioactive water systems or regeneration of resin. May also include the installation and brazing of heavy wall buss. |
| TECH | Operations & Maintenance | Provide electrical operations and maintenance support for major accelerator or experimental systems |
| TECH | Outreach | Provides outreach to schools, tour groups, or other public assemblies |
| TECH | Piping / Fluids Design | Design and document of fluids systems, components, piping layouts and P&IDs |
| TECH | PLC controls implementation | Assemble, checkout, troubleshoot, install and maintain PLC controls electronics. |
| TECH | Power Systems | Power supply development, maintenance, repair |
| TECH | Precision measurement | Measure components and parts using CMMs or similar precision equipment |

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| TECH | Precision Welding Preparation | Prepare materials (typically Aluminum) for precision welding into devices such as magnetic focusing horns. Also provide support of welding activities. |
| TECH | Printed circuit board layout | Implement the layout for the interconnecting copper traces for components on printed circuit boards |
| TECH | Pulsed Power | Support the development, construction and maintenance of pulsed power systems such as Kickers or Modulators. |
| TECH | Quality Assurance Process Control | Assures quality processes are in place and are being adhered to. |
| TECH | Quality Control Process Control | Inspect devices during fabrication and upon delivery from vendors for conformance to tolerances, including visual, dimensional, electrical, hydro, and vacuum using standard and custom equipment, and document results. |
| TECH | RF Power | Support the development, construction and maintenance of the High Power RF systems for Accelerators |
| TECH | RF Processing / Testing | Provide skill in the transport, RF measurement, ultra sonic cleaning, acid etching, rinsing, ability to work in Particle Free Ultra High Vacuum environment, vertical and horizontal testing. Skilled at handling chemicals in a safe manner. |
| TECH | Rigging | Move heavy material safely and efficiently. Operation of cranes and forklifts. Able to utilize hydraulics single and double acting, come alongs and chain falls, gantry cranes. Use of rigging equipment to remove or install magnets or other loads ie magnet vehicles or hydraulic carts. May handle highly controlled manual or remote manipulation and/or repair of radioactive components and systems. Understands slings cable, chain and synthetic, attachment points and attachment devices, load ratings and balance. Ability to analyze and plan task to move devices with no formal procedure or attachment points. |
| TECH | Safety interlock system | Interlock system development, maintenance, repair |
| TECH | Sensor interface | Ability to interface electronic sensors &/or detectors to computer readout using LabVIEW or similar DAQ software |
| TECH | Special Materials Fabrication | Fabricate components out of special materials such as carbon fiber, polystyrene (scintillator) or other polymers. This may include the maintenance, programming, and operation of machines specially designed for these materials |
| TECH | SRF Physicist | Responsible for the design, modeling, construction, commissioning, or operation of superconducting rf modules or their major components. |
| TECH | Target System Component Fabrication | Build, assemble, and test precision accelerator beam components i.e. Pulsed magnets, Lithium Collection Lens and Transformer set, Magnetic Focusing Horns. |
| TECH | Targetry Device Fabrication | Build, assemble and test precision devices for use in target facilities, e.g. targets. Lithium Collection Lens and Transformer set, Magnetic Focusing Horns, beam windows. |

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| TECH | Technical Support Activities | Provide support for technical operations including ordering, specifying and maintenance of Has, QA plans, procedures |
| TECH | UHV/HV Design | Design and document High Vacuum and Ultra High Vacuum systems, including particle free clean room systems |
| TECH | Ultra High Low particulate Vacuum Clean Room Technician | Fabricate and operate vacuum systems including Helium Leak Detection and Residual Gas Analyzer. Provide skill in selection of material, cleaning, vacuum degassing, leak detection, clean assembly, use of RGA, and the analysis from the associated RGA scan. Setup, clean, assemble and test components by Helium Leak Detection with mass spectrometer or RGA. Work in a class 100 or better clean room environment, low particule cleaning, low particulate assembly, low particulate parts bagging and storage, low particulate un-bagging and assembly, use of mass flow cart for pump down and vent up. |
| TECH | Ultra High Vacuum Technician | Fabricate and operate vacuum systems including Helium Leak Detection and Residual Gas Analyzer. Provide skill in selection of material, cleaning, vacuum degassing, leak detection, clean assembly, use of RGA, and the analysis from the associated RGA scan. Provide skill in setup, cleaning, assembly and test components by test components by helium , solution film, and ultrasonic leak detection. |
| TECH | Welding | Provide on site welding of assemblies and piping systems |
| TECH | Wire-bonding | Operate wire-bonding machine to make electrical connections to IC chip pads |