



JOB TITLES AND ASSOCIATED TASKS Sorted by Cognofile

Reliable Cognofile

11-9012.00 Farmers and Ranchers Mid – Senior level position assuming education and experience prerequisite

Harvests crops and collects specialty products, such as royal jelly from queen bee cells and honey from honeycombs. Sets up and operates farm machinery to till soil, plant, prune, fertilize, apply herbicides and pesticides, and haul harvested crops. Inspects growing environment to maintain optimum growing or breeding conditions. Determines kind and quantity of crops or livestock to be raised, according to market conditions, weather, and farm size.

Breeds and raises stock, such as animals, poultry, honeybees, or earthworms. Arranges with buyers for sale and shipment of crops. Hires and directs workers engaged in planting, cultivating, irrigating, harvesting, and marketing crops and raising livestock. Assembles, positions, and secures structures, such as trellises or beehives, using hand tools. Lubricates, adjusts, and makes minor repairs on farm equipment, using oilcan, grease gun, and hand tools. Grades and packages crop for marketing. Maintains employee and financial records. Demonstrates and explains farm work techniques and safety regulations to workers. Installs irrigation systems and irrigates fields. Selects and purchases supplies and equipment, such as seed, tree stock, fertilizers, farm machinery, implements, livestock, and feed. Destroys diseased or superfluous crops, such as queen bee cells, bee colonies, parasites, and vermin. Plans harvesting considering ripeness and maturity of crop and weather conditions. Grows out of season crops in greenhouse or early crops in cold-frame bed, or buds and grafts plant stock.

19-1031.01 Soil Conservationists Mid – Senior level position assuming education and experience prerequisite

Plans soil management practices, such as crop rotation, reforestation, permanent vegetation, contour plowing, or terracing, to maintain soil and conserve water. Develops plans for conservation, such as conservation cropping systems, woodlands management, pasture planning and engineering systems. Analyzes results of investigations to determine measures needed to maintain or restore proper soil management. Monitors projects during and after construction to ensure projects conform to design specifications. Surveys property to mark locations and measurements, using surveying instruments. Revisits land users to view implemented land use practices and plans. Discusses conservation plans, problems, and alternative solutions with land users, applying knowledge of agronomy, soil science, forestry, or agricultural sciences. Computes cost estimates of different conservation practices based on needs of land users, maintenance requirements and life expectancy of practices. Develops or participates in environmental studies. Computes design specification for implementation of conservation practices, using survey and field information technical guides, engineering manuals, and calculator. Conducts surveys and investigations of various land uses, such as rural or urban, agriculture, construction, forestry or mining.

19-1031.02 Range Managers Senior level position assuming education and experience prerequisite

Studies rangelands to determine best grazing seasons. Develops methods for protecting range from fire and rodent damage. Plans and directs construction of range improvements, such as fencing, corrals, stock watering reservoirs and soil erosion control structures. Plans and directs maintenance of range improvements. Develops methods for controlling poisonous plants in rangelands. Studies rangelands to determine number and kind of livestock that can be most profitably grazed. Develops improved practices for range reseeding. Studies forage plants and their growth requirements to determine varieties best suited to particular range.

19-1031.03 Park Naturalists Mid – Senior level position assuming education and experience prerequisite

Conducts field trips to point out scientific, historic, and natural features of park. Constructs historical, scientific, and nature visitor-center displays. Surveys park to determine forest conditions. Plans and organizes activities of seasonal staff members. Performs emergency duties to protect human life, government property, and natural features of the park. Maintains official park photographic and information files. Surveys park to determine distribution and abundance of fauna and flora. Takes photographs and motion pictures to illustrate lectures and publication and to develop displays. Prepares and presents illustrated lectures of park features. Plans and develops audiovisual devices for public programs. Confers with park staff to determine subjects to be presented to public. Interviews specialists in desired fields to obtain and develop data for park information programs.

19-4011.01 Agricultural Technicians Entry level position assuming education and experience prerequisite

Sets up laboratory and field equipment to assist research workers. Cleans and maintains laboratory and field equipment and work areas. Plants seeds in specified area, and counts plants that grow, to determine germination rate of seeds. Pricks animals, and collects blood samples for testing, using hand-held devices. Records production and test data for evaluation by personnel. Measures or weighs ingredients used in testing or as animal feed. Adjusts testing equipment and prepares culture media, following standard procedures. Waters and feeds rations to livestock and laboratory animals. Examines animals and specimens to determine presence of disease or other problems.

19-4011.02 Food Science Technicians Entry level position assuming education and experience prerequisite

Conducts standardized tests on food, beverages, additives, and preservatives to ensure compliance to standards for factors such as color, texture, nutrients, and coloring. Tastes or smells food or beverages to ensure flavor meets specifications or to select samples with specific characteristics. Computes moisture or salt content, percentage of ingredients, formulas, or other product factors, using mathematical and chemical procedures. Mixes, blends, or cultivates ingredients to make reagents or to manufacture food or beverage products. Prepares slides and incubates slides with cell cultures. Orders supplies to maintain inventory in laboratory or in storage facility of food or beverage processing plant. Measures, tests, and weighs bottles, cans, and other containers to ensure hardness, strength, and dimensions meet specifications. Cleans and sterilizes laboratory equipment. Records and compiles test results, and prepares graphs, charts, and reports.

Examines chemical and biological samples to identify cell structure, bacteria, or extraneous material, using microscope. Analyzes test results to classify product, or compares results with standard tables.

19-4061.00 City Planning Aides Entry level position assuming education and experience prerequisite

Summarizes information from maps, reports, investigations, and books. Answers public inquiries. Prepares reports, using statistics, charts, and graphs, to illustrate planning studies in areas, such as population, land use, or zoning. Prepares and updates files and records. Conducts interviews and surveys and observes conditions, which affect land usage.

19-4091.00 Environmental Science and Protection Technicians, Including Health Entry level position assuming education and experience prerequisite

Collects samples of gases, soils, water, industrial wastewater, and asbestos products to conduct tests on pollutant levels. Performs chemical and physical laboratory and field tests on collected samples to assess compliance with pollution standards, using test instruments. Examines and analyzes material for presence and concentration of contaminants such as asbestos in environment, using variety of microscopes. Calculates amount of pollutant in samples or computes air pollution or gas flow in industrial processes, using chemical and mathematical formulas. Determines amounts and kinds of chemicals to use in destroying harmful organisms and removing impurities from purification systems. Prepares samples or photomicrographs for testing and analysis. Discusses test results and analyses with customers. Calibrates microscopes and test instruments. Develops procedures and directs activities of workers in laboratory. Records test data and prepares reports, summaries, and charts that interpret test results and recommend changes.

19-4093.00 Forest and Conservation Technicians Entry level position assuming education and experience prerequisite

Compile data pertaining to size, content, condition, and other characteristics of forest tracts, under direction of foresters. Train and lead forest workers in forest propagation, fire prevention and suppression. May assist conservation specialists in managing, improving, and protecting rangelands and wildlife habitats. Provide technical assistance regarding the conservation of soil, water, and related natural resources.

21-1091.00 Health Educators Mid – Senior level position assuming education and experience prerequisite

Plans and provides educational opportunities for health personnel. Collaborates with health specialists and civic groups to ascertain community health needs, determine availability of services, and to develop goals. Promotes health discussions in schools, industry, and community agencies. Prepares and disseminates educational and informational materials. Develops and maintains cooperation between public, civic, professional, and voluntary agencies. Conducts community surveys to ascertain health needs, develop desirable health goals, and determine availability of professional health services.

21-1093.00 Social and Human Service Assistants Entry level position assuming education and experience prerequisite

Visits individuals in homes or attends group meetings to provide information on agency services, requirements and procedures. Interviews individuals and family members to compile information on social, educational, criminal, institutional, or drug history. Advises clients regarding food stamps, childcare, food, money management, sanitation, and housekeeping. Provides information on and refers individuals to public or private agencies and community services for assistance. Assists in locating housing for displaced individuals. Monitors free, supplementary meal program to ensure cleanliness of facility and that eligibility guidelines are met for persons receiving meals. Observes clients' food selections and recommends alternate economical and nutritional food choices. Meets with youth groups to acquaint them with consequences of delinquent acts. Keeps records and prepares reports for owner or management concerning visits with clients. Submits to and reviews reports and problems with superior. Informs tenants of facilities, such as laundries and

playgrounds. Demonstrates use and care of equipment for tenant use. Explains rules established by owner or management, such as sanitation and maintenance requirements, and parking regulations. Transports and accompanies clients to shopping area and to appointments, using automobile. Oversees day-to-day group activities of residents in institution. Consults with supervisor concerning programs for individual families. Cares for children in client's home during client's appointments. Observes and discusses meal preparation and suggests alternate methods of food preparation. Assists in planning of food budget, utilizing charts and sample budgets. Assists clients with preparation of forms, such as tax or rent forms.

25-2012.00 Kindergarten Teachers, Except Special Education Entry – Mid – Senior level position assuming education and experience prerequisite

Teaches elemental science, personal hygiene, and humanities to children to promote physical, mental, and social development. Encourages students in activities, such as singing, dancing, and rhythmic activities, to promote self-expression and appreciation of esthetic experience. Observes children to detect signs of ill health or emotional disturbance, and to evaluate progress. Instructs children in practices of personal cleanliness and self-care. Alternates periods of strenuous activity with periods of rest or light activity to avoid over stimulation and fatigue. Discusses student problems and progress with parents. Organizes and conducts games and group projects to develop cooperative behavior and assist children in forming satisfying relationships. Supervises student activities, such as field visits, to stimulate student interest and broaden understanding of physical and social environment.

25-4013.00 Museum Technicians and Conservators Entry – Mid – Senior level position assuming education and experience prerequisite

Preserves or directs preservation of objects, using plaster, resin, sealants, hardeners, and shellac. Cuts and welds metal sections in reconstruction or renovation of exterior structural sections and accessories of exhibits. Designs and fabricates missing or broken parts. Builds, repairs, and installs wooden steps, scaffolds, and walkways to gain access to or permit improved view of exhibited equipment. Estimates cost of restoration work. Directs curatorial and technical staff in handling, mounting, care, and storage of art objects. Notifies superior when restoration of artifact requires outside experts. Prepares reports of activities and documents methods of preservation and repair. Plans and conducts research to develop and improve methods of restoring and preserving specimens. Installs, arranges, assembles, and prepares artifacts for exhibition. Recommends preservation measures, such as control of temperature, humidity, and exposure to light, to curatorial and building maintenance staff. Evaluates need for repair and determines safest and most effective method of treating surface of object. Constructs skeletal mounts of fossils, replicas of archaeological artifacts, or duplicate specimens, using variety of materials and hand tools. Repairs or reassembles broken objects, using glue, solder, hand tools, power tools, and small machines. Studies descriptive information on object or conducts standard chemical and physical tests to determine age, composition, and original appearance. Cleans objects, such as paper, textiles, wood, metal, glass, rock, pottery, and furniture, using cleansers, solvents, soap solutions, and polishes. Repairs and restores surfaces of artifacts to original appearance and to prevent deterioration, according to accepted procedures.

25-4031.00 Library Technicians Entry level position assuming education and experience prerequisite

Assists patrons in operating equipment, obtaining library materials and services, and explains use of reference tools. Verifies bibliographical data, including author, title, publisher, publication date, and edition on computer terminal. Files catalog cards according to system used. Designs posters and special displays to promote use of library facilities or specific reading program at library. Composes explanatory summaries of contents of books or other reference materials. Prepares order slips for materials, follows up on orders, and compiles lists of materials acquired or withdrawn. Compiles and maintains records relating to circulation, materials, and equipment. Directs activities of library clerks and aides. Issues identification card to borrowers and checks materials in and out. Reviews subject matter of materials to be classified and selects classification numbers and headings according to classification system. Processes print and non-print library materials, and classifies and catalogs materials.

25-9011.00 Audio-Visual Collections Specialists Mid – Senior level position assuming education and experience prerequisite

Plans and develops pre-production ideas into outlines, scripts, continuity, storyboards, and graphics, or directs assistants to develop ideas. Sets up, adjusts, and operates equipment, such as cameras, sound mixers, and recorders during production. Determines format, approach, content, level, and medium to meet objectives most effectively within budgetary constraints, utilizing research, knowledge, and training. Constructs and positions properties, sets, lighting equipment, and other equipment. Develops manuals, texts, workbooks, or related materials for use in conjunction with production materials. Performs narration or presents announcements. Conducts training sessions on selection, use, and design of audiovisual materials, and operation of presentation equipment. Directs and coordinates activities of assistants and other personnel during production. Executes, or directs assistants to execute, rough and finished graphics and graphic designs.

Develops production ideas based on assignment or generates own ideas based on objectives and interest. Locates and secures settings, properties, effects, and other production necessities.

27-2021.00 Athletes and Sports Competitors Entry – Mid – Senior level position assuming education and experience prerequisite

Participates in athletic events and competitive sports, according to established rules and regulations. Plays professional sport and is identified according to sport played, such as football, basketball, baseball, hockey, or boxing. Represents team or professional sports club, speaking to groups involved in activities, such as sports clinics and fundraisers. Exercises and practices under direction of athletic trainer or professional coach to prepare and train for competitive events.

27-2031.00 Dancers Entry – Mid – Senior level position assuming education and experience prerequisite

Performs classical, modern, or acrobatic dances in productions. Rehearses solo or with partners or troupe members. Coordinates dancing with that of a partner or dance ensemble. Works with choreographer to refine or modify dance steps. Auditions for parts in productions. Devises and choreographs dance for self or others. Studies and practices dance moves required in role. Harmonizes body movements to rhythm of musical accompaniment.

27-2042.01 Singers Entry – Mid – Senior level position assuming education and experience prerequisite

Sings before audience or recipient of message as soloist, or in a group, as member of vocal ensemble. Practices songs and routines to maintain and improve vocal skills. Observes choral leader or prompter for cues or directions in vocal presentation. Sings a cappella or with musical accompaniment. Memorizes musical selections and routines, or sings following printed text, musical notation, or customer instructions. Interprets or modifies music, applying knowledge of harmony, melody, rhythm, and voice production, to individualize presentation and maintain audience interest.

27-2042.02 Musicians, Instrumental Entry – Mid – Senior level position assuming education and experience prerequisite

Plays musical instrument as soloist or as member of musical group, such as orchestra or band, to entertain audience. Transposes music to play in alternate key, or to fit individual style or purposes. Teaches music for specific instruments. Composes new musical scores. Directs band/orchestra. Memorizes musical scores. Plays from memory or by following score. Studies and rehearses music to learn and interpret score. Practices performance on musical instrument to maintain and improve skills. Improvises music during performance.

27-4014.00 Sound Engineering Technicians Entry level position assuming education and experience prerequisite

Records speech, music, and other sounds on recording media, using recording equipment. Synchronizes and equalizes prerecorded dialog, music, and sound effects with visual action of motion picture or television production, using control console. Reproduces and duplicates sound recordings from original recording media, using sound editing and duplication equipment. Mixes and edits voices, music, and taped sound effects, during stage performances, using sound mixing board. Regulates volume level and quality of sound during motion picture, phonograph, television, or radio production recording sessions, using control console. Keeps log of recordings. Maintains recording equipment. Sets up, adjusts, and tests recording equipment to prepare for recording session.

29-1031.00 Dietitians and Nutritionists Entry – Mid – Senior level position assuming education and experience prerequisite

Develops and implements dietary care plans based on assessments of nutritional needs, diet restrictions, and other current health plans. Supervises activities of workers engaged in planning, preparing, and serving meals. Plans, conducts, and evaluates dietary, nutritional, and epidemiological research, and analyzes findings for practical applications. Evaluates nutritional care plans and provides follow-up on continuity of care. Confers with design, building, and equipment personnel to plan for construction and remodeling of food service units. Plans and prepares grant proposals to request program funding. Writes research reports and other publications to document and communicate research findings. Develops curriculum and prepares manuals, visual aids, course outlines, and other materials used in teaching. Inspects meals served for conformance to prescribed diets and standards of palatability and appearance. Plans, organizes, and conducts training programs in dietetics, nutrition, and institutional management and administration for medical students and hospital personnel. Consults with physicians and healthcare personnel to determine nutritional needs and diet restrictions of patient or client. Instructs patients and their families in nutritional principles, dietary plans, and food selection and preparation. Monitors food service operations and ensures conformance to nutritional and quality standards.

29-1111.00 Registered Nurses Entry – Mid – Senior level position assuming education and experience prerequisite

Provides health care, first aid, and immunization in facilities such as schools, hospitals, and industry. Observes patient's skin color, dilation of pupils, and computerized equipment to monitor vital signs. Records patient's medical information and vital signs. Prepares patients for and assists with examinations. Prepares rooms, sterile instruments, equipment and supplies, and hands items to surgeon. Orders, interprets, and evaluates diagnostic tests to identify and assess patient's condition. Delivers infants and performs postpartum examinations and treatment. Instructs on topics, such as health education, disease prevention, child birth, and home nursing and develops health improvement programs. Advises and consults with specified personnel concerning necessary precautions to be taken to prevent possible contamination or infection. Administers stipulated emergency measures, and contacts obstetrician when deviations from standard are encountered during pregnancy or delivery. Informs physician of patient's condition during anesthesia. Discusses cases with physician or obstetrician.

Provides prenatal and postnatal care to obstetrical patients under supervision of obstetrician. Contracts independently to render nursing care, usually to one patient, in hospital or private home. Directs and coordinates infection control program in hospital. Maintains stock of supplies. Conducts specified laboratory tests. Refers students or patients to community agencies furnishing assistance and cooperates with agencies.

Prescribes or recommends drugs or other forms of treatment, such as physical therapy, inhalation therapy, or related therapeutic procedures. Administers local, inhalation, intravenous, and other anesthetics.

29-1123.00 Physical Therapists Entry – Mid – Senior level position assuming education and experience prerequisite

Administers manual exercises to improve and maintain function. Administers massage, applying knowledge of massage techniques and body physiology. Instructs, motivates, and assists patient to perform various physical activities and use supportive devices, such as crutches, canes, and prostheses. Administers traction to relieve pain, using traction equipment. Records treatment, response, and progress in patient's chart or enters information into computer. Confers with medical practitioners to obtain additional information, suggest revisions in treatment, and integrate physical therapy into patient's care. Evaluates, fits, and adjusts prosthetic and orthotic devices and recommends modification to orthotist. Instructs patient and family in treatment procedures to be continued at home. Plans and prepares written treatment program based on evaluation of patient data. Reviews physician's referral and patient's condition and medical records to determine physical therapy treatment required. Tests and measures patient's strength, motor development, sensory perception, functional capacity, and respiratory and circulatory efficiency and records data. Evaluates effects of treatment at various stages and adjusts treatments to achieve maximum benefit. Administers treatment involving application of physical agents, using equipment, moist packs, ultraviolet and infrared lamps, and ultrasound machines.

29-1124.00 Radiation Therapists Entry – Mid – Senior level position assuming education and experience prerequisite

Reviews prescription, diagnosis, patient chart, and identification. Maintains records, reports, and files as required. Follows principles of radiation protection for patient, self, and others. Photographs treated area of patient and processes film. Enters data into computer and sets controls to operate and adjust equipment and regulate dosage. Prepares equipment, such as immobilization, treatment, and protection devices, and positions patient according to prescription. Acts as liaison with physicist and supportive care personnel. Observes and reassures patient during treatment and reports unusual reactions to physician.

29-1126.00 Respiratory Therapists Entry – Mid – Senior level position assuming education and experience prerequisite

Sets up and operates devices, such as mechanical ventilators, therapeutic gas administration apparatus, environmental control systems, and aerosol generators. Operates equipment to administer medicinal gases and aerosol drugs to patients following specified parameters of treatment. Reads prescription, measures arterial blood gases, and reviews patient information to assess patient condition. Performs pulmonary function and adjusts equipment to obtain optimum results to therapy. Determines requirements for treatment, such as type and duration of therapy, and medication and dosages. Inspects and tests respiratory therapy equipment to ensure equipment is functioning safely and efficiently. Demonstrates respiratory care procedures to trainees and other healthcare personnel. Orders repairs when necessary. Maintains patient's chart that contains pertinent identification and therapy information. Consults with physician in event of adverse reactions. Performs bronchopulmonary drainage and assists patient in performing breathing exercises. Determines most suitable method of administering inhalants, precautions to be observed, and potential modifications needed, compatible with physician's orders. Monitors patient's physiological responses to therapy, such as vital signs, arterial blood gases, and blood chemistry changes.

29-2011.00 Medical and Clinical Laboratory Technologists Entry level position assuming education and experience prerequisite

Cuts, stains, and mounts biological material on slides for microscopic study and diagnosis, following standard laboratory procedures. Harvests cell culture at optimum time sequence based on knowledge of cell cycle differences and culture conditions. Cultivates, isolates, and assists in identifying microbial organisms, and performs various tests on these microorganisms. Prepares slide of cell culture to identify chromosomes, views and photographs slide under photomicroscope, and prints picture. Sets up, cleans, and maintains laboratory equipment. Enters analysis of medical tests and clinical results into computer for storage. Calibrates and maintains equipment used in quantitative and qualitative analysis, such as spectrophotometers, calorimeters, flame photometers, and computer controlled analyzers. Communicates with physicians, family members, and researchers requesting technical information regarding test results. Conducts research under direction of Microbiologist or Biochemist. Cuts images of chromosomes from photograph and identifies and arranges them in numbered pairs on karyotype chart, using standard practices. Studies blood cells, number of blood cells, and morphology, using microscopic technique. Performs tests to determine blood group, type, and compatibility for transfusion purposes. Conducts chemical analysis of body fluids, including blood, urine, and spinal fluid, to determine presence of normal and abnormal components. Examines and tests human, animal, or other materials for microbial organisms. Selects and prepares specimen and media for cell culture, using aseptic technique and knowledge of medium components and cell requirements. Examines slides under microscope to detect deviations from norm and to report abnormalities for further study. Analyzes samples of biological material for chemical content or reaction.

29-2012.00 Medical and Clinical Laboratory Technicians Entry level position assuming education and experience prerequisite

Conducts quantitative and qualitative chemical analyses of body fluids, such as blood, urine, and spinal fluid. Conducts blood tests for transfusion purposes. Tests vaccines for sterility and virus inactivity. Draws blood from patient, observing principles of asepsis to obtain blood sample. Prepares standard volumetric solutions and reagents used in testing. Inoculates fertilized eggs, broths, or other bacteriological media with organisms. Incubates bacteria for specified period and prepares vaccines and serums by standard laboratory methods. Performs blood counts, using microscope.

29-2031.00 Cardiovascular Technologists and Technicians Entry – Mid – Senior level position assuming education and experience prerequisite

Operates diagnostic imaging equipment to produce contrast-enhanced radiographs of heart and cardiovascular system. Activates fluoroscope and camera to produce images used to guide catheter through cardiovascular system. Injects contrast medium into blood vessels of patient. Conducts electrocardiogram, phonocardiogram, echocardiogram, stress testing, and other cardiovascular tests, using specialized electronic test equipment, recording devices, and laboratory instruments. Conducts tests of pulmonary system, using spirometer and other respiratory testing equipment. Observes gauges, recorder, and video screens of data analysis system, during imaging of cardiovascular system. Assesses cardiac physiology and calculates valve areas from blood flow velocity measurements. Alerts physician to abnormalities or changes inpatient responses. Explains testing procedures to patient to obtain cooperation and reduce anxiety. Records test results and other data into patients record. Reviews test results with physician. Prepares and positions patients for testing. Adjusts equipment and controls according to physician's orders or established protocol. Enters factors such as amount and quality of radiation beam, and filming sequence, into computer. Compares measurements of heart wall thickness and chamber sizes to standard norms to identify abnormalities. Records analyses of heart and related structures using ultrasound equipment. Operates monitor to measure and record functions of cardiovascular and pulmonary systems, as part of cardiac catheterization team.

29-2032.00 Diagnostic Medical Sonographers Entry – Mid – Senior level position assuming education and experience prerequisite

Produce ultrasonic recordings of internal organs for use by physicians.

29-2051.00 Dietetic Technicians Entry level position assuming education and experience prerequisite

Guides individuals and families in food selection, preparation, and menu planning, based upon nutritional needs. Assists in referrals for continuity of patient care. Supervises food production and service. Develops job specifications, job descriptions, and work schedules. Assists in implementing established cost control procedures. Plans menus based on established guidelines. Obtains and evaluates dietary histories of individuals to plan nutritional programs. Selects, schedules, and conducts orientation and in-service education programs. Standardizes recipes and tests new products for use in facility.



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29-2053.00 Psychiatric Technicians Entry level position assuming education and experience prerequisite

Helps patients with their personal hygiene, such as bathing and keeping beds, clothing, and living areas clean. Intervenes to restrain violent or potentially violent or suicidal patients by verbal or physical means as required. Leads prescribed individual or group therapy sessions as part of specific therapeutic procedures. Completes initial admittance forms for new patients. Contacts patient's relatives by telephone to arrange family conferences. Administers oral medications and hypodermic injections, following physician's prescriptions and hospital procedures. Takes and records measures of patient's general physical condition, such as pulse, temperature, and respiration, to provide daily information. Observes patients to detect behavior patterns and reports observations to medical staff. Issues medications from dispensary and maintains records in accordance with specified procedures.

29-2054.00 Respiratory Therapy Technicians Entry level position assuming education and experience prerequisite

Provide specific, well-defined respiratory care procedures under the direction of respiratory therapists and physicians.

29-2056.00 Veterinary Technologists and Technicians Entry – Mid level position assuming education and experience prerequisite

Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepare vaccines and serums for prevention of diseases. Prepare tissue samples, take blood samples, and execute laboratory tests, such as urinalysis and blood counts. Clean and sterilize instruments and materials and maintain equipment and machines.

29-2061.00 Licensed Practical and Licensed Vocational Nurses Entry – Mid – Senior level position assuming education and experience prerequisite

Administers specified medication, orally or by subcutaneous or intramuscular injection, and notes time and amount on patient's charts. Dresses wounds, gives enemas, douches, alcohol rubs, and massages. Observes patients and reports adverse reactions to medication or treatment to medical personnel in charge.

Applies compresses, ice bags, and hot water bottles. Washes and dresses bodies of deceased persons. Cleans rooms, makes beds, and answers patients' calls.

Assists in delivery, care, and feeding of infants. Prepares or examines food trays for prescribed diet and feeds patients. Records food and fluid intake and output. Sterilizes equipment and supplies, using germicides, sterilizer, or autoclave. Collects samples, such as urine, blood, and sputum, from patients for testing and performs routine laboratory tests on samples. Assembles and uses such equipment as catheters, tracheotomy tubes, and oxygen suppliers. Inventories and requisitions supplies. Bathes, dresses, and assists patients in walking and turning. Takes and records patient's vital signs. Provides medical treatment and personal care to patients in private home settings.

29-2081.00 Opticians, Dispensing Entry – Mid – Senior level position assuming education and experience prerequisite

Measures client's bridge and eye size, temple length, vertex distance, pupillary distance, and optical centers of eyes, using measuring devices. Verifies finished lenses are ground to specification. Recommends specific lenses, lens coatings, and frames to suit client needs. Heats, shapes, or bends plastic or metal frames to adjust eyeglasses to fit client, using pliers and hands. Assists client in selecting frames according to style and color, coordinating frames with facial and eye measurements and optical prescription. Grinds lens edges or applies coating to lenses. Instructs clients in adapting to wearing and caring for eyeglasses.

Fabricates lenses to prescription specifications. Repairs damaged frames. Evaluates prescription in conjunction with client's vocational and avocational visual requirements.

Determines client's current lens prescription, when necessary, using lensometer or lens analyzer and client's eyeglasses. Prepares work order and instructions for grinding lenses and fabricating eyeglasses.

29-2091.00 Orthotists and Prosthetists Entry – Mid – Senior level position assuming education and experience prerequisite

Fits patients for device, using static and dynamic alignments. Participates in research to modify design, fit, and function of orthopedic or prosthetic devices. Lectures and demonstrates to colleagues and other professionals concerned with orthopedics or prosthetics. Supervises laboratory activities or activities of prosthetic assistants and support staff relating to development of orthopedic or prosthetic devices. Repairs and maintains orthopedic prosthetic devices, using hand tools. Selects materials and components, and makes cast measurements, model modifications, and layouts, using measuring equipment. Evaluates device on patient and makes adjustments to assure fit, function, comfort, and quality. Instructs patients in use of orthopedic or prosthetic devices.

Maintains patients' records. Examines, measures, and evaluates patients' needs in relation to disease and functional loss. Designs orthopedic and prosthetic devices, according to physician's prescription. Assists physician in formulating specifications and prescription for orthopedic and/or prosthetic devices.

29-9091.00 Athletic Trainers Entry – Mid – Senior level position assuming education and experience prerequisite
Evaluates physical condition of athletes and advises or prescribes routine and corrective exercises to strengthen muscles. Administers emergency first aid, treats minor chronic disabilities, or refers injured person to physician. Recommends special diets to improve health, increase stamina, and reduce weight of athletes. Wraps ankles, fingers, wrists or other body parts with synthetic skin, gauze, or adhesive tape to support muscles and ligaments. Massages body parts to relieve soreness, strains, and bruises.

31-1011.00 Home Health Aides Entry level position assuming education and experience prerequisite
Changes bed linens, washes and irons patient's laundry, and cleans patient's quarters. Assists patients into and out of bed, automobiles, or wheelchair, to lavatory, and up and down stairs. Administers prescribed oral medication under written direction of physician or as directed by home care nurse and aide. Massages patient and applies preparations and treatment, such as liniment or alcohol rubs and heat-lamp stimulation. Performs variety of miscellaneous duties as requested, such as obtaining household supplies and running errands. Entertains patient, reads aloud, and plays cards and other games with patient. Maintains records of services performed and of apparent condition of patient. Purchases, prepares, and serves food for patient and other members of family, following special prescribed diets.

31-1012.00 Nursing Aides, Orderlies, and Attendants Entry level position assuming education and experience prerequisite
Feeds patients unable to feed themselves. Sets up equipment, such as oxygen tents, portable x-ray machines, and overhead irrigation bottles. Prepares food trays. Bathes, grooms, and dresses patients. Measures and records food and liquid intake and output.
Measures and records vital signs. Administers medication as directed by physician or nurse. Cleans room and changes linen.

Stores, prepares, and issues dressing packs, treatment trays, and other supplies. Administers catheterizations, bladder irrigations, enemas, and douches. Sterilizes equipment and supplies. Administers massages and alcohol rubs. Transports patient to areas, such as operating and x-ray rooms. Turns and re-positions bedfast patients, alone or with assistance, to prevent bedsores. Assists patient to walk.

31-1013.00 Psychiatric Aides Entry level position assuming education and experience prerequisite
Monitors patients to ensure patients remain in assigned areas and aids or restrains patients to prevent injuries. Accompanies patients to and from wards for medical and dental treatments, shopping trips, and to religious and recreational events. Encourages patients to participate in social, educational, and recreational activities. Notes and maintains records of patients' activities, such as vital signs, eating habits, and daily behavior.
Administers prescribed medications, measures vital signs, and performs other nursing duties, such as collecting specimens and drawing blood samples. Serves meals and feeds patients needing assistance. Demonstrates and assists patients in bathing, dressing, and grooming. Assists patients in becoming accustomed to hospital routine.

31-2011.00 Occupational Therapist Assistants Entry level position assuming education and experience prerequisite
Assists occupational therapist to plan, implement, and administer educational, vocational, and recreational activities to restore, reinforce, and enhance task performances. Reports information and observations to supervisor verbally. Assists in evaluation of physically, developmentally, mentally retarded, or emotionally disabled client's daily living skills and capacities. Instructs or assists in instructing patient and family in home programs and basic living skills as well as care and use of adaptive equipment. Helps professional staff demonstrate therapy techniques, such as manual and creative arts, and games. Designs and adapts equipment and working-living environment. Transports patient to and from occupational therapy work area. Prepares work material, assembles and maintains equipment, and orders supplies. Fabricates splints and other assistant devices. Assists educational specialist or clinical psychologist in administering situational or diagnostic tests to measure client's abilities or progress. Maintains observed information in client records and prepares written reports.

31-2012.00 Occupational Therapist Aides Entry level position assuming education and experience prerequisite
Assists occupational therapist to plan, implement, and administer educational, vocational, and recreational activities to restore, reinforce, and enhance task performances. Assists in evaluation of physically, developmentally, mentally retarded, or emotionally disabled client's daily living skills and capacities. Instructs or assists in instructing patient and

family in home programs and basic living skills as well as care and use of adaptive equipment. Reports information and observations to supervisor verbally. Transports patient to and from occupational therapy work area. Maintains observed information in client records and prepares written reports. Designs and adapts equipment and working-living environment. Prepares work material, assembles and maintains equipment, and orders supplies. Fabricates splints and other assistant devices. Assists educational specialist or clinical psychologist in administering situational or diagnostic tests to measure client's abilities or progress. Helps professional staff demonstrate therapy techniques, such as manual and creative arts, and games.

31-2021.00 Physical Therapist Assistants Entry – Mid level position assuming education and experience prerequisite

Fits patients for orthopedic braces, prostheses, and supportive devices, such as crutches. Performs clerical duties, such as taking inventory, ordering supplies, answering telephone, taking messages, and filling out forms. Cleans work area and equipment after treatment. Transports patients to and from treatment area. Records treatment given and equipment used. Administers active and passive manual therapeutic exercises, therapeutic massage, and heat, light, sound, water, and electrical modality treatments, such as ultrasound. Administers traction to relieve neck and back pain, using intermittent and static traction equipment. Instructs, motivates, and assists patients to learn and improve functional activities, such as perambulation, transfer, ambulation, and daily-living activities. Safeguards, motivates, and assists patients practicing exercises and functional activities under direction of professional staff. Trains patients in use and care of orthopedic braces, prostheses, and supportive devices, such as crutches. Adjusts fit of supportive devices for patients, as instructed. Provides routine treatments, such as hydrotherapy, hot and cold packs, and paraffin bath. Confers with physical therapy staff and others to discuss and evaluate patient information for planning, modifying, and coordinating treatment. Secures patients into or onto therapy equipment. Observes patients during treatments and compiles and evaluates data on patients' responses to treatments and progress, and reports to physical therapist. Measures patient's range-of-joint motion, body parts, and vital signs to determine effects of treatments or for patient evaluations. Assists patients to dress, undress, and put on and remove supportive devices, such as braces, splints, and slings.

31-2022.00 Physical Therapist Aides Entry level position assuming education and experience prerequisite

Observes patients during treatment and compiles and evaluates data on patients' responses to treatments and progress, and reports to physical therapist. Administers active and passive manual therapeutic exercises, therapeutic massage, and heat, light, sound, water, and electrical modality treatments, such as ultrasound. Administers traction to relieve neck and back pain, using intermittent and static traction equipment. Instructs, motivates, and assists patients to learn and improve functional activities, such as perambulation, transfer, ambulation, and daily-living activities. Safeguards, motivates, and assists patients practicing exercises and functional activities under direction of professional staff. Trains patients in use and care of orthopedic braces, prostheses, and supportive devices, such as crutches. Adjusts fit of supportive devices for patients, as instructed. Provides routine treatments, such as hydrotherapy, hot and cold packs, and paraffin bath. Performs clerical duties, such as taking inventory, ordering supplies, answering telephone, taking messages, and filling out forms. Cleans work area and equipment after treatment. Transports patients to and from treatment area. Fits patients for orthopedic braces, prostheses, and supportive devices, such as crutches. Records treatment given and equipment used. Assists patients to dress, undress, and put on and remove supportive devices, such as braces, splints, and slings. Measures patient's range-of-joint motion, body parts, and vital signs to determine effects of treatments or for patient evaluations. Confers with physical therapy staff and others to discuss and evaluate patient information for planning, modifying, and coordinating treatment. Secures patients into or onto therapy equipment.

31-9092.00 Medical Assistants Entry – Mid level position assuming education and experience prerequisite

Prepares treatment rooms for examination of patients. Cleans and sterilizes instruments. Computes and mails monthly statements to patients and records transactions. Contacts medical facility or department to schedule patients for tests. Performs routine laboratory tests. Gives injections or treatments to patients. Receives payment for bills. Operates x-ray, electrocardiograph (EKG), and other equipment to administer routine diagnostic tests. Gives physiotherapy treatments, such as diathermy, galvanics, and hydrotherapy. Completes insurance forms. Lifts and turns patients. Inventories and orders medical supplies and materials. Hands instruments and materials to physician. Schedules appointments. Interviews patients, measures vital signs, weight, and height, and records information. Maintains medical records.

31-9094.00 Medical Transcriptionists Entry – Mid – Senior level position assuming education and experience prerequisite

Use transcribing machines with headset and foot pedal to listen to recordings by physicians and other healthcare professionals dictating a variety of medical reports, such as emergency room visits, diagnostic imaging studies,

operations, chart reviews, and final summaries. Transcribe dictated reports and translate medical jargon and abbreviations into their expanded forms. Edit as necessary and return reports in either printed or electronic form to the dictator for review and signature, or correction.

31-9095.00 Pharmacy Aides Entry – Mid level position assuming education and experience prerequisite

Record drugs delivered to the pharmacy, store incoming merchandise, and inform the supervisor of stock needs. May operate cash register and accept prescriptions for filling.

31-9096.00 Veterinary Assistants and Laboratory Animal Caretakers Entry – Mid level position assuming education and experience prerequisite

Assists veterinarian in variety of animal health care duties, including injections, venipunctures, and wound dressings. Completes routine laboratory tests and cares for and feeds laboratory animals. Inspects products or carcasses to ensure compliance with health standards, when employed in food processing plant. Assists professional personnel with research projects in commercial, public health, or research laboratories. Assists veterinarian during surgical procedures, passing instruments and materials in accordance with oral instructions. Prepares examination or treatment room, and holds or restrains animal during procedures. Prepares patient, medications, equipment, and instruments for surgical procedures, using specialized knowledge.

33-2011.01 Municipal Fire Fighters Entry – Mid level position assuming education and experience prerequisite

Positions and climbs ladders to gain access to upper levels of buildings, or to rescue individuals from burning structures. Protects property from water and smoke, using waterproof salvage covers, smoke ejectors, and deodorants. Creates openings in buildings for ventilation or entrance, using ax, chisel, crowbar, electric saw, or core cutter. Selects hose nozzle, depending on type of fire, and directs stream of water or chemicals onto fire. Administers first aid and cardiopulmonary resuscitation to injured persons and those overcome by fire and smoke. Responds to fire alarms and other emergency calls. Sprays foam onto runway, extinguishes fire, and rescues aircraft crew and passengers in air-crash emergency. Inspects buildings for fire hazards and compliance with fire prevention ordinances. Participates in courses in hydraulics, pump operation, and fire fighting techniques. Participates in fire drills and demonstrations of fire fighting techniques. Maintains fire fighting equipment and apparatus, vehicles, hydrants, and fire station. Drives and operates fire fighting vehicles and equipment. Establishes fire lines to prevent unauthorized persons from entering area. Assesses fire and situation, reports to superior, and receives instructions, using two-way radio.

33-2011.02 Forest Fire Fighters Entry – Mid level position assuming education and experience prerequisite

Fells trees, cuts and clears brush, and digs trenches, to contain fire, using ax, chain saw, or shovel. Packs parachutes. Parachutes from aircraft and guides direction of fall toward clear landing area near scene of fire. Orients self in relation to fire, using compass and map, and collects supplies and equipment dropped by parachute. Works as member of fire fighting crew. Patrols burned area after fire to watch for hot spots that may restart fire. Ascertain best method for attacking fire, and communicates plan to airplane or base camp, using two-way radio. Extinguishes flames and embers to suppress fire, using shovel, or engine or hand-driven water or chemical pumps.

33-2021.01 Fire Inspectors Mid – Senior level position assuming education and experience prerequisite

Inspects interiors and exteriors of buildings to detect hazardous conditions or violations of fire codes. Issues permits and summons, and enforces fire codes. Tests equipment, such as gasoline storage tanks, air compressors, and fire extinguishing and fire protection equipment to endure conformance to fire and safety codes. Discusses violations and unsafe conditions with facility representative, makes recommendations, and instructs in fire safety practices. Prepares reports, such as inspections performed, code violations, and recommendations for eliminating fire hazards. Gives First aid in emergencies. Collects fees for permits and licenses.

33-2021.02 Fire Investigators Mid – Senior level position assuming education and experience prerequisite

Examines site and collects evidence to gather information relating to cause of fire, explosion, or false alarm. Photographs damage and evidence relating to cause of fire or explosion, for future reference. Subpoenas and interviews witnesses, property owners, and building occupants to obtain information and sworn testimony. Conducts internal investigation to determine negligence and violation of laws and regulations by fire department employees. Analyzes evidence and other information to determine probable cause of fire or explosion. Tests site and materials to establish facts, such as burn patterns and flash points of materials, using test equipment. Prepares and maintains reports of investigation results, and records of convicted arsonists and arson suspects. Swears out warrants and arrests, logs, fingerprints, and detains suspected arsonists. Testifies in court for cases involving fires, suspected arson, and false alarms. Instructs children about dangers of fire.

33-2022.00 Forest Fire Inspectors and Prevention Specialists Mid – Senior level position assuming education and experience prerequisite

Inspects forest tracts and logging areas for fire hazards, such as accumulated wastes, mishandling of combustibles, or defective exhaust systems. Locates forest fires on area map, using azimuth sighter and known landmarks. Relays messages relative to emergencies, accidents, location of crew and personnel, weather forecasts, and fire hazard conditions. Patrols and maintains surveillance, looking for forest fires, hazardous conditions, and weather phenomena. Inspects campsites to ensure camper compliance with forest use regulations. Estimates size and characteristics of fire and reports findings to base camp by radio or telephone. Gives directives and instructions regarding sanitation, fire prevention, violation corrections, and related forest regulations. Examines and inventories firefighting equipment, such as axes, fire hoses, shovels, pumps, buckets, and fire extinguishers to determine amount and condition. Gives directions to crew on fire line during forest fire. Extinguishes smaller fires with portable extinguisher, shovel, and ax. Maintains records and logbooks. Directs maintenance and repair of firefighting equipment and requisitions new equipment. Restricts public access and recreational use of forestlands during critical fire season. Observes instruments and reports meteorological data, such as temperature, relative humidity, wind direction and velocity, and types of cloud formations.

33-3021.04 Child Support, Missing Persons, and Unemployment Insurance Fraud Investigators Senior level position assuming education and experience prerequisite

Serves warrants and makes arrests to return persons sought in connection with crimes or for non-payment of child support. Interviews and discusses case with parent charged with non-payment of support to resolve issues in lieu of filing court proceedings. Reviews files and criminal records to develop possible leads, such as previous addresses and aliases. Interviews client to obtain information, such as relocation of absent parent, amount of child support awarded, and names of witnesses. Contacts employers, neighbors, relatives, and law enforcement agencies to locate person sought and verify information gathered about case. Obtains extradition papers to bring about return of fugitive. Confers with prosecuting attorney to prepare court case and with court clerk to obtain arrest warrant and schedule court date. Prepares file indicating data, such as wage records of accused, witnesses, and blood test results. Computes amount of child support payments. Testifies in court to present evidence regarding cases. Examines medical and dental x-rays, fingerprints, and other information to identify bodies held in morgue. Examines case file to determine that divorce decree and court ordered judgment for payment are in order. Completes reports to document information acquired during criminal and child support cases, and actions taken. Monitors child support payments awarded by court to ensure compliance and enforcement of child support laws. Determines types of court jurisdiction, according to facts and circumstances surrounding case, and files court action.

33-3051.01 Police Patrol Officers Entry – Mid – Senior level position assuming education and experience prerequisite

Patrols specific area on foot, horseback, or motorized conveyance. Relays complaint and emergency-request information to appropriate agency dispatcher. Provides road information to assist motorists. Investigates traffic accidents and other accidents to determine causes and to determine if crime has been committed. Evaluates complaint and emergency-request information to determine response requirements. Reviews facts to determine if criminal act or statute violation is involved. Directs traffic flow and reroutes traffic in case of emergencies. Monitors traffic to ensure motorists observe traffic regulations and exhibit safe driving procedures. Arrests perpetrator of criminal act or submits citation or warning to violator of motor vehicle ordinance. Draws diagram of crime or accident scene. Photographs crime or accident scene. Interviews principal and eyewitnesses. Renders aid to accident victims and other persons requiring first aid for physical injuries. Records facts and prepares reports to document activities. Testifies in court to present evidence or act as witness in traffic and criminal cases. Expedites processing of prisoners, and prepares and maintains records of prisoner bookings and prisoner status during booking and pre-trial process. Maintains order, responds to emergencies, protects people and property, and enforces motor vehicle and criminal law.

33-9011.00 Animal Control Workers Entry – Mid level position assuming education and experience prerequisite

Captures or removes stray, uncontrolled, or abused animals from undesirable conditions and transports to shelter. Trains police officers in dog handling and training techniques for tracking, crowd control, and narcotics and bomb detection. Examines animals for injuries or malnutrition and arranges for medical treatment. Investigates animal bites and alleged violations, interviews witnesses, and reports violations to police or requests arrest of violators. Removes animals from vehicle and places animal in shelter cage or other enclosure. Examines animal licenses and inspects establishments housing animals for compliance with laws, and issues warnings or summonses to violators. Writes reports of activities, and maintains files of impoundment and disposition of animals. Supplies animals with food, water, and personal care.

Euthanizes rabid, unclaimed, or severely injured animals. Conducts tours of facility, demonstrates dog handling techniques, and explains use of dogs in police work, using trained dog. Instructs handlers in dog health care and handler's responsibilities.

33-9032.00 Security Guards Entry – Mid – Senior level position assuming education and experience prerequisite

Patrols industrial and commercial premises to prevent and detect signs of intrusion and ensure security of doors, windows, and gates. Warns persons of rule infractions or violations, and apprehends or evicts violators from premises, using force when necessary. Calls police or fire departments in cases of emergency, such as fire or presence of unauthorized persons. Operates detecting devices to screen individuals and prevent passage of prohibited articles into restricted areas. Answers telephone calls to take messages, answer questions, and provide information during non-business hours or when switchboard is closed. Escorts or drives motor vehicle to transport individuals to specified location and to provide personal protection. Circulates among visitors, patrons, and employees to preserve order and protect property. Answers alarms and investigates disturbances. Monitors and authorizes entrance and departure of employees, visitors, and other persons to guard against theft and maintain security of premises. Inspects and adjusts security systems, equipment, and machinery to ensure operational use and to detect evidence of tampering.

33-9092.00 Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers Entry – Mid – Senior level position assuming education and experience prerequisite

Patrols or monitors recreational areas, such as trails, slopes, and swimming areas, on foot, in vehicle, or from tower. Observes activities in assigned area with binoculars to detect hazards, disturbances, or safety infractions. Contacts emergency medical services in case of serious injury. Rescues distressed persons, using rescue techniques and equipment. Cautions recreational participant regarding inclement weather, unsafe areas, or illegal conduct. Examines injured persons and administers first aid or cardiopulmonary resuscitation, utilizing training and medical supplies and equipment. Inspects recreational equipment, such as rope tows, T-bar, J-bar, and chair lifts, for safety hazards and damage or wear. Inspects facilities for cleanliness and maintains order in recreational areas. Participates in recreational demonstrations to entertain resort guests. Instructs participants in skiing, swimming, or other recreational activity. Maintains information on emergency medical treatment and weather and beach conditions, using report forms.

35-2012.00 Cooks, Institution and Cafeteria Entry – Mid – Senior level position assuming education and experience prerequisite

Cooks foodstuffs according to menu, special dietary or nutritional restrictions, and number of persons to be served. Cleans, cuts, and cooks meat, fish, and poultry. Requisitions food supplies, kitchen equipment and appliances, and other supplies and receives deliveries. Apportions and serves food to residents, employees, or patrons. Washes pots, pans, dishes, utensils, and other cooking equipment. Directs activities of one or more workers who assist in preparing and serving meals. Compiles and maintains food cost records and accounts. Plans menus, taking advantage of foods in season and local availability. Bakes breads, rolls, and other pastries. Prepares and cooks vegetables, salads, dressings, and desserts. Cleans and inspects galley equipment, kitchen appliances, and work areas for cleanliness and functional operation.

35-2013.00 Cooks, Private Household Entry – Mid – Senior level position assuming education and experience prerequisite

Prepare meals in private homes.

35-2014.00 Cooks, Restaurant Mid – Senior level position assuming education and experience prerequisite

Weighs, measures, and mixes ingredients according to recipe or personal judgment, using various kitchen utensils and equipment. Seasons and cooks food according to recipes or personal judgment and experience. Regulates temperature of ovens, broilers, grills, and roasters.

Observes and tests food to determine that it is cooked, by tasting, smelling, or piercing, and turns or stirs food if necessary. Bakes, roasts, broils, and steams meats, fish, vegetables, and other foods. Bakes bread, rolls, cakes, and pastry. Washes, peels, cuts, and seeds fruits and vegetables to prepare fruits and vegetables for use. Inspects food preparation and serving areas to ensure observance of safe, sanitary food-handling practices. Estimates food consumption and requisitions or purchases supplies, or procures food from storage. Butchers and dresses animals, fowl or shellfish, or cuts and bones meat prior to cooking. Carves and trims meats, such as beef, veal, ham, pork, and lamb for hot or cold service, or for sandwiches. Plans items on menu. Portions, arranges, and garnishes food, and serves food to waiter or patron.

35-2021.00 Food Preparation Workers Entry – Mid level position assuming education and experience prerequisite

Cleans and portions, and cuts or peels various foods to prepare for cooking or serving. Cleans, cuts, slices, or disjoints meats and poultry to prepare for cooking. Prepares and serves variety of beverages, such as coffee, tea, and soft drinks.

Portions and arranges food on serving dishes, trays, carts, or conveyor belts. Prepares variety of foods according to customers' orders or instructions of superior, following approved procedures. Carries food supplies, equipment, and utensils to and from storage and work areas. Distributes food to waiters and waitresses to serve to customers. Stores food in designated containers and storage areas to prevent spoilage. Butchers and cleans fowl, fish, poultry, and shellfish to prepare for cooking or serving. Requisitions, stores, and distributes food supplies, equipment, and utensils. Cleans and maintains work areas, equipment, and utensils.

35-3011.00 Bartenders Entry – Mid level position assuming education and experience prerequisite

Mixes ingredients, such as liquor, soda, water, sugar, and bitters, to prepare cocktails and other drinks. Collects money for drinks served. Serves wine and draft or bottled beer. Arranges bottles and glasses to make attractive display. Orders or requisitions liquors and supplies. Prepares appetizers, such as pickles, cheese, and cold meats. Cleans glasses, utensils, and bar equipment. Slices and pits fruit for garnishing drinks.

35-3021.00 Combined Food Preparation and Serving Workers, Including Fast Food Entry – Mid level position assuming education and experience prerequisite

Selects food items from serving or storage areas and places food and beverage items on serving tray or in takeout bag. Cooks or re-heats food items, such as french fries. Receives payment. Notifies kitchen personnel of shortages or special orders.

Requests and records customer order and computes bill. Makes and serves hot and cold beverages or desserts.

35-3022.00 Counter Attendants, Cafeteria, Food Concession, and Coffee Shop Entry – Mid level position assuming education and experience prerequisite

Serves food, beverages, or desserts to customers in variety of settings, such as take out counter of restaurant or lunchroom. Calls order to kitchen and picks up and serves order when it is ready. Replenishes foods at serving stations. Brews coffee and tea and fills containers with requested beverages. Accepts payment for food, using cash register or adding machine to total check. Carves meat. Scrubs and polishes counters, steam tables, and other equipment, and cleans glasses, dishes, and fountain equipment and polishes metalwork on fountain. Adds relishes and garnishes according to instructions. Orders items to replace stocks. Prepares sandwiches, salads, and other short order items. Wraps menu items, such as sandwiches, hot entrees, and desserts. Serves sandwiches, salads, beverages, desserts, and candies to employees in industrial establishment. Writes items ordered on tickets, totals orders, passes orders to cook, and gives ticket stubs to customers to identify filled orders. Serves salads, vegetables, meat, breads, and cocktails, ladles soups and sauces, portions desserts, and fills beverage cups and glasses. Prepares and serves soft drinks and ice cream dishes, such as sundaes, using memorized formulas and methods of following directions.

35-3031.00 Waiters and Waitresses Entry – Mid level position assuming education and experience prerequisite

Takes order from patron for food or beverage, writing order down or memorizing it. Serves meals or beverages to patrons. Relays order to kitchen, or enters order into computer. Observes patrons to respond to additional requests, and to determine when meal has been completed or beverage consumed. Obtains and replenishes supplies of food, tableware, and linen. Computes cost of meal or beverage. Removes dishes and glasses from table or counter and takes them to kitchen for cleaning. Accepts payment and returns change, or refers patron to Cashier. Fills salt, pepper, sugar, cream, condiment, and napkin containers. Prepares salads, appetizers, and cold dishes, portions desserts, brews coffee, and performs other services as determined by establishment's size and practices. Carves meats, bones fish and fowl, and prepares special dishes and desserts at workstation or patron's table. Cleans and arranges assigned station, including side stands, chairs, and table pieces, such as linen, silverware, and glassware. Garnishes and decorates dishes preparatory to serving. Prepares hot, cold, and mixed drinks for patrons, and chills bottles of wine. Serves, or assists patrons to serve themselves, at buffet or smorgasbord table. Presents menu to patron, suggests food or beverage selections, and answers questions regarding preparation and service.

35-3041.00 Food Servers, Non-restaurant Entry – Mid level position assuming education and experience prerequisite

Prepares and delivers food trays. Examines filled tray for completeness. Takes order and relays order to kitchen or serving counter to be filled.

Apportions and places food servings on plates and trays according to order or instructions. Carries silverware, linen, and food on tray or uses cart. Removes tray and stacks dishes for return to kitchen. Prepares food items, such as sandwiches, salads, soups, and beverages, and places items, such as eating utensils, napkins, and condiments, on trays. Records amount and types of special food items served to customers. Prepares fountain drinks, such as sodas, milkshakes, and malted milks. Washes dishes and cleans work area, tables, cabinets, and ovens; and sweeps service area with broom.

Restocks service counter with items, such as ice, napkins, and straws. Totals and presents check to customer and accepts payment for service. Reads orders to determine items to place on food tray. Pushes carts to rooms and serves trays to patients or guests.

35-9011.00 Dining Room and Cafeteria Attendants and Bartender Helpers Entry – Mid level position assuming education and experience prerequisite

Carries dirty dishes to kitchen and wipes tables and seats with dampened cloth. Replenishes food and equipment at steam tables and serving counters of cafeteria to facilitate service to patrons. Cleans bar and equipment, and replenishes bar supplies, such as liquor, fruit, ice, and dishes. Sets tables with clean linens, sugar bowls, and condiments. Mixes and prepares flavors for mixed drinks. Garnishes and positions foods on table to ensure visibility to patrons and convenience in serving. Circulates among diners and serves coffee. Washes glasses, bar, and equipment, polishes bar fixtures, mops floors, and removes empty bottles and trash. Stocks refrigerating units with wines and bottled beer, replaces empty beer kegs, and slices and pits fruit used to garnish drinks. Keeps assigned area and equipment clean, makes coffee, fills fruit juice dispensers, and stocks vending machines with food in automat. Carries trays from food counters to tables for cafeteria patrons and serves ice water and butter to patrons. Replenishes supply of clean linens, silverware, glassware, and dishes in dining room. Carries food, dishes, trays, and silverware from kitchen and supply departments to serving counters.

35-9021.00 Dishwashers Entry – Mid level position assuming education and experience prerequisite

Cleans and maintains work areas, equipment, and utensils. Carries or transfers by hand truck supplies and equipment between storage and work areas. Removes garbage and trash and places refuse in designated pick up area. Stocks serving stations with food and utensils. Loads or unloads trucks used in delivering or picking up food and supplies. Sets up banquet tables. Cleans and prepares various foods for cooking or serving. Prepares and packages individual place settings.

35-9031.00 Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop Entry – Mid level position assuming education and experience prerequisite

Greets and escorts guests to tables, and provides menus. Inspects dining room serving stations for neatness and cleanliness. Requisitions table linens and other supplies for tables and serving stations. Schedules dining reservations and arranges parties or special service for diners. Adjusts complaints of patrons. Assigns work tasks and coordinates activities of dining room personnel to ensure prompt and courteous service to patrons.

37-2011.00 Janitors and Cleaners, Except Maids and Housekeeping Cleaners Entry – Mid level position assuming education and experience prerequisite

Sweeps, mops, scrubs, and vacuums floors of buildings, using cleaning solutions, tools and equipment. Gathers and empties trash. Cleans or polishes walls, ceilings, windows, plant equipment and building fixtures, using steam cleaning equipment, scrapers, brooms and variety of hand and power tools. Applies waxes or sealers to wood or concrete floors. Tends, cleans, adjusts and services furnaces, air conditioners, boilers and other building heating and cooling systems. Removes snow from sidewalks, driveways, and parking areas, using snowplow, snow blower, and snow shovel, and spreads snow melting chemicals. Notifies management personnel concerning need for major repairs or additions to building operating systems. Sprays insecticides and fumigants to prevent insect and rodent infestation. Cleans laboratory equipment, such as glassware and metal instruments, using solvents, brushes, rags, and power cleaning equipment. Mows and trims lawns and shrubbery, using mowers and hand and power trimmers, and clears debris from grounds. Mixes water and detergents or acids in container to prepare cleaning solutions, according to specifications. Drives vehicles, such as van, industrial truck or industrial vacuum cleaner. Cleans chimneys, flues, and connecting pipes, using power and hand tools. Cleans and restores building interiors damaged by fire, smoke, or water, using commercial cleaning equipment. Services and repairs cleaning and maintenance equipment and machinery and performs minor routine painting, plumbing, electrical, and related activities. Moves items between departments, manually or using hand truck. Sets up, arranges, and removes decorations, tables, chairs, ladders, and scaffolding, for events such as banquets and social functions. Requisitions supplies and equipment used in cleaning and maintenance duties. Dusts furniture, walls, machines, and equipment.

37-2012.00 Maids and Housekeeping Cleaners Entry – Mid level position assuming education and experience prerequisite

Cleans rooms, hallways, lobbies, lounges, restrooms, corridors, elevators, stairways, and locker rooms and other work areas. Cleans rugs, carpets, upholstered furniture, and draperies, using vacuum cleaner. Dusts furniture and equipment. Empties wastebaskets, and empties and cleans ashtrays. Collects soiled linens for laundering, and receives and stores linen supplies in linen closet. Washes walls, ceiling, and woodwork. Polishes metalwork, such as fixtures and fittings.

Prepares sample rooms for sales meetings. Cleans and removes debris from driveway and garage areas. Arranges decorations, apparatus, or furniture for banquets and social functions. Replaces light bulbs. Washes beds and mattresses, and remakes beds after dismissal of hospital patients. Moves and arranges furniture, turns mattresses, hangs draperies, dusts venetian blinds, and polishes metalwork to ready hotel facilities for occupancy.

Replenishes supplies, such as drinking glasses, writing supplies, and bathroom items. Transports trash and waste to disposal area. Cleans swimming pool with vacuum. Delivers television sets, ironing boards, baby cribs, and rollaway beds to guest's rooms. Washes windows, door panels, and sills. Sweeps, scrubs, waxes, and polishes floors, using brooms and mops and powered scrubbing and waxing machines.

37-2021.00 Pest Control Workers Entry – Mid level position assuming education and experience prerequisite

Sprays or dusts chemical solutions, powders, or gases into rooms, onto clothing, furnishings or wood, and over marshlands, ditches, catch-basins. Sets mechanical traps and places poisonous paste or bait in sewers, burrows, and ditches. Cuts or bores openings in building or surrounding concrete, accesses infested areas, inserts nozzle, and injects pesticide to impregnate ground. Directs and/or assists other workers in treatment and extermination processes to eliminate and control rodents, insects, and weeds. Studies preliminary reports and diagrams of infested area and determines treatment type required to eliminate and prevent recurrence of infestation. Digs up and burns or sprays weeds with herbicides. Cleans work site after completion of job. Records work activities performed. Drives truck equipped with power spraying equipment.

Posts warning signs and locks building doors to secure area to be fumigated. Positions and fastens edges of tarpaulins over building and tapes vents to ensure air-tight environment and checks for leaks. Cleans and removes blockages from infested areas to facilitate spraying procedure and provide drainage, using broom, mop, shovel, and rake. Measures area dimensions requiring treatment, using rule, calculates fumigant requirements, and estimates cost for service. Inspects premises to identify infestation source and extent of damage to property, wall, and roof porosity, and access to infested locations.

37-3011.00 Landscaping and Groundskeeping Workers Entry – Mid level position assuming education and experience prerequisite

Mows lawns, using power mower. Digs holes for plants, mixes fertilizer or lime with dirt in holes, inserts plants, and fills holes with dirt. Trims and picks flowers and cleans flowerbeds. Hauls or spreads topsoil, and spreads straw over seeded soil to hold soil in place. Decorates garden with stones and plants. Attaches wires from planted trees to support stakes. Maintains tools and equipment. Seeds and fertilizes lawns. Shovels snow from walks and driveways. Builds forms and mixes and pours cement to form garden borders.

Applies herbicides, fungicides, fertilizers, and pesticides, using spreaders or spray equipment. Waters lawns, trees, and plants, using portable sprinkler system, hose, or watering can.

37-3012.00 Pesticide Handlers, Sprayers, and Applicators, Vegetation Entry – Mid level position assuming education and experience prerequisite

Lifts, pushes, and swings nozzle, hose, and tube to direct spray over designated area. Covers area to specified depth, applying knowledge of weather conditions, droplet size, elevation-to- distance ratio, and obstructions. Fills sprayer tank with water and chemicals, according to formula. Starts motor and engages machinery, such as sprayer agitator and pump. Cleans and services machinery to ensure operating efficiency, using water, gasoline, lubricants, and hand tools. Plants grass with seed spreader and operates straw blower to cover seeded area with asphalt and straw mixture. Sprays livestock with pesticides. Gives driving instructions to truck driver, using hand and horn signals, to ensure complete coverage of designated area. Connects hoses and nozzles, selected according to terrain, distribution pattern requirements, type of infestation, and velocity.

37-3013.00 Tree Trimmers and Pruners Entry – Mid – Senior level position assuming education and experience prerequisite

Cuts away dead and excess branches from trees, using handsaws, pruning hooks, sheers, and clippers. Applies tar or other protective substances to cut surfaces to seal surfaces against insects. Scrapes decayed matter from cavities in trees and fills holes with cement to promote healing and to prevent further deterioration. Uses truck-mounted hydraulic lifts and pruners and power pruners. Prunes, cuts down, fertilizes, and sprays trees as directed by tree surgeon. Climbs trees, using climbing hooks and belts, or climbs ladders to gain access to work area.

39-2011.00 Animal Trainers Entry – Mid – Senior level position assuming education and experience prerequisite

Trains animals to protect property, compete in shows or races, obey commands, or perform tricks to entertain audience. Evaluates animal to determine temperament, ability, and aptitude for training. Trains guard dog to protect property and teaches guide dog its master to function as team. Cues or signals animal during performance. Arranges for mating of

stallions and mares, and assists mares during foaling. Feeds, exercises, and gives general care to animal. Observes animal's physical condition to detect illness or unhealthy condition requiring medical care. Trains horses as independent operator and advises owners regarding purchase of horses. Rehearses animal according to script for motion picture or television film or stage or circus program. Conducts training program to develop desired behavior. Trains horses for riding, show, work, or racing.

39-2021.00 Non-farm Animal Caretakers Entry – Mid – Senior level position assuming education and experience prerequisite

Feeds and waters animal according to schedules and feeding instructions. Repairs fences, cages or pens. Installs equipment in animal care facility, such as infrared lights, feeding devices, or cribs. Observes and cautions children petting and feeding animals in designated area. Responds to questions from patrons and provides information about animals, such as behavior, habitat, breeding habits, or facility activities. Saddles and shoes animals. Orders, unloads, and stores feed and supplies. Records information about animals, such as weight, size, physical condition, diet, medications, and food intake. Transfers animals between enclosures for breeding, birthing, shipping, or rearranging exhibits. Anesthetizes and inoculates animals, according to instructions. Cleans and disinfects animal quarters, such as pens, stables, cages, and yards, and surgical or other equipment, such as saddles and bridles. Washes, brushes, clips, trims, and grooms animals. Exercises animals to maintain their fitness and health, or trains animals to perform certain tasks. Adjusts controls to regulate specified temperature and humidity of animal quarters, nursery, or exhibit area. Mixes food, liquid formulas, medications, or food supplements according to instructions, prescriptions, and knowledge of animal species. Examines and observes animals for signs of illness, disease, or injury and provides treatment or informs veterinarian.

39-3031.00 Ushers, Lobby Attendants, and Ticket Takers Entry – Mid level position assuming education and experience prerequisite

Collects admission tickets and passes from patrons at entertainment events. Refuses admittance to patrons without ticket or pass, or who are undesirable for reasons, such as intoxication or improper attire. Greets patrons desiring to attend entertainment events. Distributes programs to patrons, or door checks to patrons temporarily leaving establishment. Assists other workers to change advertising display. Runs errand for patrons of press box, such as obtaining refreshments and carrying news releases. Serves patrons at refreshment stand during intermission. Monitors patrons' activities to prevent disorderly conduct and rowdiness and to detect infractions of rules. Counts and records number of tickets collected. Examines ticket or pass to verify authenticity, using criteria such as color and date issued. Assists patrons to find seats, search for lost articles, and locate facilities, such as restrooms and telephones. Verifies credentials of patrons desiring entrance into press box and permits only authorized persons to enter.

39-3091.00 Amusement and Recreation Attendants Entry – Mid level position assuming education and experience prerequisite

Schedules use of recreation facilities, such as golf courses, tennis courts, bowling alleys, and softball diamonds. Receives, retrieves, replaces, and stores sports equipment and supplies, arranges items in designated areas, and erects or removes equipment. Assists patrons on and off amusement rides, boats, or ski lifts, and in mounting and riding animals, and fastens or directs patrons to fasten safety devices. Provides information about facilities, entertainment options, and rules and regulations. Inspects, repairs, adjusts, tests, fuels, and oils sporting and recreation equipment, game machines, and amusement rides. Cleans sporting equipment, vehicles, rides, booths, facilities, and grounds. Attends amusement booth in parks, carnivals, or stadiums and awards prizes to winning players. Sells and serves refreshments to customers. Announces and describes amusement park attractions to patrons to entice customers to games and other entertainment. Provides entertainment services, such as guessing patron's weight, conducting games, or explaining use of arcade game machines, and photographing patrons. Launches, moors, and shows demonstrates use of boats, such as rowboats, canoes, and motorboats, or caddies for golfers. Monitors activities to ensure adherence to rules and safety procedures to protect environment and maintain order, and ejects unruly patrons. Attends animals, performing such tasks as harnessing, saddling, feeding, watering, and grooming, and drives horse-drawn vehicle for entertainment or advertising purposes. Records details of attendance, sales, receipts, reservations, and repair activities. Directs patrons of establishment to rides, seats, or attractions, or escorts patrons on tours of points of interest. Operates, drives, or explains use of mechanical riding devices or other automatic equipment in amusement parks, carnivals, or recreation areas. Rents, sells, and issues sports equipment and supplies, such as bowling shoes, golf balls, swimming suits, and beach chairs. Sells tickets and collects fees from customers, and collects or punches tickets.

39-3093.00 Locker Room, Coatroom, and Dressing Room Attendants Entry – Mid level position assuming education and experience prerequisite

Explains nature and cost of services and facilities available, demonstrates use of equipment, and answers customer

inquiries. Cleans and polishes footwear, using brush, sponge, cleaning fluid, polish, wax, liquid or sole dressing, and dauber. Arranges, supervises, and provides valet services such as clothes pressing, shoe shining, sending and receiving mail, and car parking. Performs general cleaning and maintenance of facilities and equipment, using mop, broom, lawn mower, and other cleaning aids. Secures boat to dock, using mooring lines, connects utility lines to boat, and pumps water from boat for patrons. Sells service-related products and collects fees for services, rent, products, or supplies. Records and reviews client's activities to assure program is followed. Transports customers and baggage, using motor vehicle. Assists persons in establishments such as apartments, hotels, or hospitals, by opening doors, carrying bags, and performing related services. Stores personal possessions for patrons, issues a claim check for articles stored, and returns articles on receipt of check. Issues keys, athletic equipment, or supplies, such as soap, towels, and weight loss aids. Inspects building and grounds, and reports or removes unauthorized or undesirable persons. Schedules appointments for client sessions, registers guests, and assigns accommodations. Interviews, evaluates, and advises client to develop personal improvement plan, such as weight loss, using scales, measures, and recommended guidelines. Conducts body conditioning therapy such as steam or electric shock, using physical or visual stimuli. Assists customer in tub or steam room, bathes or massages them, using water, brush, mitt, sponge, and towel, to clean skin. Packs equipment and uniforms and attends to needs of individual athletes in clubhouse.

39-6012.00 Concierges Mid – Senior level position assuming education and experience prerequisite

Assist patrons at hotel, apartment or office building with personal services. May take messages, arrange or give advice on transportation, business or entertainment, or monitor guest requests for housekeeping and maintenance.

39-6032.00 Transportation Attendants, Except Flight Attendants and Baggage Porters Entry – Mid level position assuming education and experience prerequisite

Greets passengers boarding mode of transportation and announces stops. Responds to passengers' questions, requests, or complaints. Mails letters or arranges for dispatch of telegrams to assist passengers. Carries baggage to assigned rooms or to station platform. Cleans rooms and bathroom facilities, changes linens, and replenishes supplies to washroom. Inspects kitchen and dining area to ensure adherence to sanitation requirements. Signals transportation operator to stop or proceed, opens and closes doors, and establishes order among passengers. Counts and verifies tickets and seat reservations, and records number of passengers boarding and leaving mode of transportation. Issues and collects passenger boarding passes and transfers and tears or punches tickets to prevent reuse. Distributes sports and game equipment, magazines, newspapers, pillows, blankets, and other items to passengers and guests. Demonstrates safety procedures. Provides seating arrangements, and straightens and adjusts window shades and seat cushions to accommodate requests of passengers. Serves snacks, lunch, and refreshments.

39-9011.00 Childcare Workers Entry – Mid level position assuming education and experience prerequisite

Cares for children in institutional setting, such as group homes, nursery schools, private businesses, or schools for the handicapped. Disciplines children and recommends or initiates other measures to control behavior, such as caring for own clothing and picking up toys and books. Assists in preparing food for children and serves meals and refreshments to children and regulates rest periods. Wheels handicapped children to classes or other areas of facility, secure in equipment, such as chairs and slings. Monitors children on life-support equipment to detect malfunctioning of equipment and calls for medical assistance when needed. Instructs children regarding desirable health and personal habits, such as eating, resting, and toilet habits. Places or hoists children into baths or pools. Organizes and participates in recreational activities, such as games. Reads to children, and teaches them simple painting, drawing, handwork, and songs.

39-9021.00 Personal and Home Care Aides Entry – Mid level position assuming education and experience prerequisite

Advises and assists family members in planning nutritious meals, purchasing and preparing foods, and utilizing commodities from surplus food programs. Explains fundamental hygiene principles. Assists in training children. Gives bedside care to incapacitated individuals and trains family members to provide bedside care. Assigns housekeeping duties according to children's capabilities. Obtains information for client, for personal and business purposes. Types correspondence and reports. Drives motor vehicle to transport client to specified locations. Assists parents in establishing good study habits for children. Assists client with dressing, undressing, and toilet activities. Prepares and maintains records of assistance rendered. Evaluates needs of individuals served and plans for continuing services.

43-4021.00 Correspondence Clerks Entry – Mid level position assuming education and experience prerequisite

Composes letter in response to request or problem identified by correspondence. Gathers data to formulate reply. Types acknowledgment letter to person sending correspondence. Processes orders for goods requested in correspondence. Reviews records pertinent to resolution of problem for completeness and accuracy and attaches records

to correspondence for reply by others. Compiles data from records to prepare periodic reports. Investigates discrepancies in reports and records and confers with personnel in affected departments to ensure accuracy and compliance with procedures. Confers with company personnel regarding feasibility of complying with writer's request. Maintains files and control records to show status of action in processing correspondence. Routes correspondence to other departments for reply. Compiles data pertinent to manufacture of special products for customers. Completes form letter in response to request or problem identified by correspondence. Reads incoming correspondence to ascertain nature of writer's concern and determine disposition of correspondence.

43-4061.01 Claims Takers, Unemployment Benefits Entry – Mid level position assuming education and experience prerequisite

Interviews claimants returning at specified intervals to certify claimants for continuing benefits. Reviews data on job application or claim forms to ensure completeness. Assists applicants completing application forms for job referrals or unemployment compensation claims. Answers questions concerning registration for jobs or application for unemployment benefits. Assists applicants in filling out forms, using knowledge of information required or native language of applicant. Schedules unemployment insurance claimants for adjudication interview when question of eligibility arises. Refers applicants to job opening or interview with other staff, in accordance with administrative guidelines or office procedure.

43-4061.02 Welfare Eligibility Workers and Interviewers Entry – Mid – Senior level position assuming education and experience prerequisite

Interviews and investigates applicants for public assistance to gather information pertinent to their application. Initiates procedures to grant, modify, deny or terminate eligibility and grants for various assistance programs. Authorizes amounts of grants, money payments, food stamps, medical care, or other general assistance. Computes public housing rent in proportion to eligible tenant's income. Conducts annual, interim, and special housing reviews and home visits to ensure conformance to regulations. Reviews training approval forms and payment vouchers for completeness and accuracy. Receives and records security deposits and advance rents from selected tenants. Interprets and explains rules and regulations governing eligibility and grants, payment methods, and applicant's legal rights. Explains eligibility requirements, form completion requirements, community resources for financial assistance, housing opportunities, and tenant selection methods. Prepares and assists applicants in completion of routine intake and personnel forms. Prepares regular and special reports, keeps records of assigned cases, and submits individual recommendations. Selects and refers eligible applicants to public assistance or public housing agencies. Records and evaluates personal and financial data to determine initial or continuing eligibility.

43-4071.00 File Clerks Entry – Mid level position assuming education and experience prerequisite

Sorts or classifies information, according to content, purpose, user criteria, or chronological, alphabetical, or numerical order. Scans or reads incoming materials to determine filing order or location. Inspects or examines materials or files for accuracy, legibility, or damage. Assigns and records or stamps identification numbers or codes to index materials for filing. Photographs or makes copies of data and records, using photocopying or microfilming equipment. Authorizes or documents materials movement, using logbook or computer and traces missing files. Inserts additional data on file records. Removes or destroys outdated materials in accordance with file maintenance schedules of legal requirements. Locates and retrieves files upon request from authorized users. Places materials into storage receptacles, such as file cabinets, boxes, bins, or drawers, according to classification and identification information.

43-4111.00 Interviewers, Except Eligibility and Loan Entry – Mid – Senior level position assuming education and experience prerequisite

Contacts persons at home, place of business, or field location, by telephone, mail, or in person. Explains reason for questioning, and other specified information. Asks questions to obtain various specified information, such as person's name, address, age, religion, and state of residency. Records results and data from interview or survey, using computer or specified form. Assists person in filling out application or questionnaire. Compiles and sorts data from interview and reviews to correct errors.

43-4131.00 Loan Interviewers and Clerks Entry – Mid – Senior level position assuming education and experience prerequisite

Verifies and examines information and accuracy of loan application and closing documents. Interviews loan applicant to obtain personal and financial data and to assist in filling out application. Assembles and compiles documents for closing, such as title abstract, insurance form, loan form, and tax receipt. Prepares and types loan applications, closing documents, legal documents, letters, forms, government notices, and checks, using computer. Records applications for

loan and credit, loan information, and disbursement of funds, using computer. Contacts customer by mail, telephone, or in person concerning acceptance or rejection of application. Checks value of customer collateral to be held as loan security. Answers questions and advises customer regarding loans and transactions. Calculates, reviews, and corrects errors on interest, principal, payment, and closing costs, using computer or calculator. Reviews customer accounts to determine whether payments are made on time and that other loan terms are being followed. Accepts payment on accounts. Orders property insurance or mortgage insurance policies to ensure protection against loss on mortgaged property. Files and maintains loan records. Establishes credit limit and grants extension of credit on overdue accounts. Presents loan and repayment schedule to customer. Schedules and conducts closing of mortgage transaction. Contacts credit bureaus, employers, and other sources to check applicant credit and personal references. Submits loan application with recommendation for underwriting approval.

43-5021.00 Couriers and Messengers Entry – Mid level position assuming education and experience prerequisite

Delivers messages and items, such as documents, packages, and food, between establishment departments, and to other establishments and private homes. Records information, such as items received and delivered, and recipient's replies to message. Monitors fluid levels and replenishes fuel to maintain delivery vehicle. Obtains signature, receipt, or payment from recipient for articles delivered. Calls by telephone to deliver verbal messages. Receives message or materials to be delivered, and information on recipient, such as name, address, and telephone number. Walks, rides bicycle, drives vehicle, or uses public conveyance to reach destination to deliver message or materials, in person.

43-5051.00 Postal Service Clerks Entry – Mid – Senior level position assuming education and experience prerequisite

Collects payment for postage stamps, postal cards, stamped envelopes, metered postage, and money orders. Answers questions pertaining to mail regulations, procedures, postage rates, and mail delivery. Feeds mail into electric electronic postage canceling device or hand stamps to cancel postage. Transports mail from one workstation to another within same postal office. Registers and insures letters and parcels. Assists public in complying with federal regulations of Postal Service and other federal agencies, such as registration of aliens. Posts announcements on centrally located bulletin board to distribute government related information to general public. Receives, registers, and refers for investigation complaints regarding mail theft, delivery, lost mail, and damaged mail. Calibrates postage meters. Examines mail for correct postage. Weighs and computes mailing costs of letters and parcels based on type, weight, and destination. Sorts mail according to groups and destination by hand or by operating electronic mail sorting or scanning device.

43-9111.00 Statistical Assistants Entry – Mid level position assuming education and experience prerequisite

Compiles statistics from source materials, such as production, sales, and personnel records, surveys, and questionnaires. Verifies completeness and accuracy of source data. Posts and files charts. Prepares reports and graphs to show comparisons or survey results of statistical information obtained. Computes statistical data according to formulas, using computer or calculator. Assembles and classifies statistics, following prescribed procedures. Operates computer to enter and retrieve data and prepare correspondence and reports.

45-2041.00 Graders and Sorters, Agricultural Products Entry – Mid level position assuming education and experience prerequisite

Grades and sorts products, according to factors, such as color, length, width, appearance, feel, and smell. Weighs and places products in containers, according to grade and marks grade on containers. Segregates products on conveyor belt or table, according to grade, color, size, fiber quality, species, deformities, and sex. Estimates weight of product visually and by feel. Examines product fibers through microscope to determine maturity and spirality of fibers. Discards inferior or defective products and foreign matter and places acceptable products in containers for further processing. Pulls product sample apart between fingers to determine fiber quality. Records grade on tag or shipping, receiving, or sales sheet.

45-2092.01 Nursery Workers Entry – Mid level position assuming education and experience prerequisite

Hauls and spreads topsoil, fertilizer, peat moss, and other materials to condition soil, using wheelbarrow or cart and shovel. Sows grass seed or plants plugs of grass and cuts, rolls, and stacks sod. Fills growing tanks with water. Moves containerized shrubs, plants, and trees, using wheelbarrow. Ties, bunches, wraps roots, and packs flowers, plants, shrubs, and trees to fill orders. Dips rose cuttings into vat to disinfect prior to storage. Folds and staples corrugated forms to make boxes used for packing horticultural products. Traps and destroys pests, such as moles, gophers, and mice, using pesticides. Cuts and opens incision in rootstock, using budding knife, and inserts and ties bud. Plants, sprays, weeds, and waters plants, shrubs, and trees, using hand tools and gardening tools. Digs, rakes, and screens soil and fills cold frames and hot beds to prepare them for planting. Inspects bud tie to ensure quality.

45-2093.00 Farmworkers, Farm and Ranch Animals Entry – Mid – Senior level position assuming education and experience prerequisite

Waters livestock. Castrates or docks ears and tails of animals. Assists with birthing of animals. Fills feed troughs with feed. Debeaks and trims wings of poultry. Maintains equipment and machinery. Segregates animals according to weight, age, color, and physical condition. Grooms, clips, and trims animals. Moves equipment, poultry, or livestock manually or using truck or cart from one location to another. Inspects and repairs fences, stalls, and pens. Maintains growth, feeding, production, and cost records. Mixes feed, additives, and medicines in prescribed portions. Collects, inspects, packs or places eggs in incubator. Milks farm animals, such as cows and goats, by hand or using milking machine. Marks livestock to identify ownership, and grade, using brands, tags, paint, or tattoos. Cleans stalls, pens, and equipment, using disinfectant solutions, brushes, shovels and water hoses. Examines animals to detect disease and injuries. Applies or administers medications and vaccinates animals. Sprays livestock with disinfectants and insecticides. Herds livestock to pasture for grazing, or to scales, trucks, or other enclosures.

47-2021.00 Brickmasons and Blockmasons Entry – Mid – Senior level position assuming education and experience prerequisite

Lays and aligns bricks, blocks, or tiles to build or repair structures or high temperature equipment, such as cupola, kilns, ovens, or furnaces. Applies and smooths mortar or other mixture over work surface and removes excess, using trowel and hand tools. Measures distance from reference points and marks guidelines to lay out work, using plumb bobs and levels. Examines brickwork or structure to determine need for repair. Fastens or fuses brick or other building material to structure with wire clamps, anchor holes, torch, or cement. Cleans working surface to remove scale, dust, soot, or chips of brick and mortar, using broom, wire brush, or scrapper. Sprays or spreads refractory material over brickwork to protect against deterioration. Removes burned or damaged brick or mortar, using sledgehammer, crowbar, chipping gun, or chisel. Breaks or cuts bricks, tiles, or blocks to size, using edge of trowel, hammer, or power saw. Mixes specified amount of sand, clay, dirt, or mortar powder with water to form refractory mixture. Calculates angles and courses and determines vertical and horizontal alignment of courses.

47-2022.00 Stonemasons Entry – Mid – Senior level position assuming education and experience prerequisite

Shapes, trims, faces and cuts marble or stone preparatory to setting, using power saws, cutting equipment, and hand tools. Lays out wall pattern or foundation of monument, using straight edge, rule, or staked lines. Finishes joints between stones, using trowel. Smooths, polishes, and bevels surfaces, using hand tools and power tools. Positions mold along guidelines of wall, presses mold in place, and removes mold and paper from wall. Removes sections of monument from truck bed, and guides stone onto foundation, using skids, hoist, or truck crane. Repairs cracked or chipped areas of ornamental stone or marble surface, using blowtorch and mastic. Digs trench for foundation of monument, using pick and shovel. Drills holes in marble or ornamental stone and anchors bracket. Lines interiors of molds with treated paper and fills molds with composition-stone mixture. Cleans excess mortar or grout from surface of marble, stone, or monument, using sponge, brush, water, or acid. Mixes mortar or grout and pours or spreads mortar or grout on marble slabs, stone, or foundation. Aligns and levels stone or marble, using measuring devices, such as rule, square, and plumbline. Sets stone or marble in place, according to layout or pattern.

47-2031.01 Construction Carpenters Entry – Mid – Senior level position assuming education and experience prerequisite

Shapes or cuts materials to specified measurements, using hand tools, machines, or power saw. Assembles and fastens materials, using hand tools and wood screws, nails, dowel pins, or glue, to make framework or props. Installs structures and fixtures, such as windows, frames, floorings, and trim, or hardware, using carpenter's hand and power tools. Builds or repairs cabinets, doors, frameworks, floors, and other wooden fixtures used in buildings, using woodworking machines, carpenter's hand tools, and power tools. Fills cracks and other defects in plaster or plasterboard and sands patch, using patching plaster, trowel, and sanding tool. Removes damaged or defective parts or sections of structure and repairs or replaces, using hand tools. Verifies trueness of structure, using plumb bob and level. Prepares layout according to blueprint or oral instructions, using rule, framing square, and calipers. Estimates amount and kind of lumber or other materials required, and selects and orders them. Inspects ceiling or floor tile, wall coverings, siding, glass, or woodwork to detect broken or damaged structures. Studies specifications in blueprints, sketches, or building plans to determine materials required and dimensions of structure to be fabricated. Measures and marks cutting lines on materials, using ruler, pencil, chalk, and marking gauge. Finishes surfaces of woodworking or wallboard in houses and buildings, using paint, hand tools, and paneling.

47-2031.02 Rough Carpenters Entry – Mid – Senior level position assuming education and experience prerequisite

Assembles and fastens material together to construct wood or metal framework of structure, using bolts, nails, or screws.

Measures materials or distances, using square, measuring tape, or rule to lay out work. Bores boltholes in timber with masonry or concrete walls, using power drill. Installs rough door and window frames, subflooring, fixtures, or temporary supports in structures undergoing construction or repair. Examines structural timbers and supports to detect decay, and replaces timber, using hand tools, nuts, and bolts. Anchors and braces forms and other structures in place, using nails, bolts, anchor rods, steel cables, planks, wedges, and timbers. Digs or directs digging of postholes and sets pole to support structure. Fabricates parts, using woodworking and metalworking machines. Erects forms of prefabricated forms, framework, scaffolds, hoists, roof supports, or chutes, using hand tools, plumb rule, and level. Cuts or saws boards, timbers, or plywood to required size, using handsaw, power saw, or woodworking machine. Studies blueprints and diagrams to determine dimensions of structure or form to be constructed, or erected.

47-2031.03 Carpenter Assemblers and Repairers Entry – Mid – Senior level position assuming education and experience prerequisite

Measures and marks location of studs, leaders, and receptacle openings, using tape measure, template, and marker. Installs prefabricated windows and doors, insulation, wall, ceiling and floor panels or siding, using adhesives, hoists, hand tools, and power tools. Removes surface defects, using knife, scraper, wet sponge, electric iron, and sanding tools. Trims overlapping edges of wood, weatherboard, using portable router or power saw, and hand tools. Applies stain, paint or crayons to defects and filter to touch up the repaired area. Directs crane operator in positioning floor, wall, ceiling, and roof panel on house foundation. Moves panel or roof section to other workstations or to storage or shipping area, using electric hoist. Studies blueprints, specification sheets, and drawings to determine style and type of window or wall panel required. Fills cracks, seams, depressions, and nail holes with filler. Examines wood surfaces for defects, such as nicks, cracks, or blisters. Measures cut materials to determine conformance to specifications, using tape measure. Realigns windows and screens to fit casements and oils moving parts. Repairs or replaces defective locks, hinges, cranks, and pieces of wood, using glue, hand tools, and power tools. Lays out and aligns materials on worktable or in assembly jig according to specified instructions. Cuts sidings and moldings, sections of weatherboard, openings in sheetrock, and lumber, using hand tools and power tools. Aligns and fastens materials together, using hand tools and power tools, to form building or bracing.

47-2031.04 Ship Carpenters and Joiners Entry – Mid – Senior level position assuming education and experience prerequisite

Reads blueprints to determine dimensions of furnishings in ships or boats. Assembles and installs hardware, gaskets, floors, furnishings, or insulation, using adhesive, hand tools, and power tools. Cuts wood or glass to specified dimensions, using hand tools and power tools. Shapes irregular parts and trims excess material from bulkhead and furnishings to ensure fit meets specifications. Constructs floors, doors, and partitions, using woodworking machines, hand tools, and power tools. Greases gears and other moving parts of machines on ship. Transfers dimensions or measurements of wood parts or bulkhead on plywood, using measuring instruments and marking devices. Repairs structural woodwork and replaces defective parts and equipment, using hand tools and power tools. Shapes and laminates wood to form parts of ship, using steam chambers, clamps, glue, and jigs.

47-2031.05 Boat Builders and Shipwrights Entry – Mid – Senior level position assuming education and experience prerequisite

Cuts and forms parts, such as keel, ribs, sidings, and support structures and blocks, using woodworking hand tools and power tools. Attaches metal parts, such as fittings, plates, and bulkheads, to ship, using brace and bits, augers, and wrenches. Smooths and finishes ship surfaces, using power sander, broadax, adz, and paint, and waxes and buffs surface to specified finish. Measures and marks dimensional lines on lumber, following template and using scribe. Establishes dimensional reference points on layout and hull to make template of parts and locate machinery and equipment. Consults with customer or supervisor and reads blueprint to determine necessary repairs. Attaches hoist to sections of hull, and directs hoist operator to align parts over blocks, according to layout of boat. Marks outline of boat on building dock, shipway, or mold loft according to blueprint specifications, using measuring instruments and crayon. Inspects boat to determine location and extent of defect. Positions and secures support structures on construction area. Cuts out defect, using power tools and hand tools, and fits and secures replacement part, using caulking gun, adhesive, or hand tools. Assembles and installs hull timbers and other structures in ship, using adhesive, measuring instruments, and hand tools or power tools. Constructs and shapes wooden frames, structures, and other parts according to blueprint specifications, using hand tools, power tools, and measuring instruments.

47-2031.06 Brattice Builders Entry – Mid – Senior level position assuming education and experience prerequisite

Installs rigid and flexible air ducts to transport air to work areas. Erects partitions to support roof in areas unsuited to timbering or bolting. Drills and blasts obstructing boulders to reopen ventilation shafts.



JOB TITLES AND ASSOCIATED TASKS Sorted by Cognofile

47-2041.00 Carpet Installers Entry – Mid level position assuming education and experience prerequisite

Stretches carpet to ensure smooth surface and presses carpet in place over tack strips. Installs carpet on some floors using adhesive, following prescribed method. Cuts carpet padding to size and installs padding, following prescribed method. Cuts and trims carpet to fit along wall edges, openings, and projections. Studies floor sketches to determine area to be carpeted and amount of material needed to complete job. Joins edges of carpet that meet at openings, using tape with glue and heated carpet iron. Moves furniture from area to be carpeted and removes old carpet and padding. Fastens metal treads across door openings or where carpet meets flooring to hold carpet in place. Nails tack strips around area to be carpeted or uses old strips to attach edges of new carpet. Sews sections of carpeting together by hand, when necessary. Measures and cuts carpeting to size according to floor sketches, using carpet knife.

47-2042.00 Floor Layers, Except Carpet, Wood, and Hard Tiles Entry – Mid – Senior level position assuming education and experience prerequisite

Lays out, positions, and applies tile and other decorative material to floors, walls, and cabinets. Rolls and presses sheet wall and floor covering into cement base to smooth and finish surface, using hand roller. Brushes waterproof compound onto surface and fills cracks with plaster, putty, or grout to seal pores and form smooth foundation. Trims excess covering materials, tacks edges, and joins sections of covering material to form tight joint. Disconnects and removes appliances, light fixtures, and worn floor and wall covering from floors, walls, and cabinets. Sweeps, scrapes, sands, or chips dirt and irregularities to clean base surfaces. Removes excess cement to clean finished surface and applies grout to seal joints of tile. Measures and marks guidelines on surfaces or foundations, using chalk lines and dividers. Heats and softens floor covering materials to patch cracks and form floor coverings around irregular surfaces, using blow torch. Applies adhesive cement onto floor or wall material to join and adhere foundation material. Cuts covering and foundation materials, according to blueprints and sketches, and cuts pattern around floor obstructions.

47-2043.00 Floor Sanders and Finishers Entry – Mid – Senior level position assuming education and experience prerequisite

Guides machine over surface of floor until surface is smooth. Applies filler compound to floor to seal wood. Scrapes and sands floor edges and areas inaccessible to floor sander, using scraper and disk-type sander. Attaches sandpaper to roller of sanding machine.

47-2044.00 Tile and Marble Setters Entry – Mid – Senior level position assuming education and experience prerequisite

Positions and presses or taps tile with trowel handle to affix tile to plaster or adhesive base. Cuts and shapes tile, using tile cutters and biters. Measures and cuts metal lath to size for walls and ceilings, using tin snips. Wipes grout between tiles and removes excess, using wet sponge. Brushes glue onto manila paper on which design has been drawn and positions tile's finished side down onto paper. Mixes and applies mortar or cement to edges and ends of drain tiles to seal halves and joints. Installs and anchors fixtures in designated position, using hand tools. Tacks lath to wall and ceiling surfaces, using staple gun or hammer. Selects tile and other items to be installed, such as bathroom accessories, walls, panels, and cabinets, according to specifications. Measures and marks surfaces to be tiled and lays out work, following blueprints. Spreads plaster or concrete over surface to form tile base and levels to specified thickness, using brush, trowel and screed. Cuts tile backing to required size, using shears. Spreads mastic or other adhesive base on roof deck to form base for promenade tile, using serrated spreader.

47-2051.00 Cement Masons and Concrete Finishers Entry – Mid – Senior level position assuming education and experience prerequisite

Chips, scrapes, and grinds high spots, ridges, and rough projections to finish concrete, using pneumatic chisel, hand chisel, or hand tools. Polishes surface, using polishing or surfacing machine. Pushes roller over surface to imbed chips in surface. Builds wooden molds, and clamps molds around area to be repaired, using hand tools. Cuts out damaged areas, drills holes for reinforcing rods, and positions reinforcing rods to repair concrete, using power saw and drill. Mixes cement, sand, and water to produce concrete, grout, or slurry, using hoe, trowel, tamper, scraper, or concrete-mixing machine. Molds expansion joints and edges, using edging tools, jointers, and straightedge. Applies muriatic acid to clean surface, and rinses with water. Cuts metal division strips, and presses them into terrazzo base so that top edges form desired design or pattern. Spreads roofing paper on surface of foundation, and spreads concrete onto roofing paper with trowel to form terrazzo base. Produces rough concrete surface, using broom. Signals truck driver to position truck to facilitate pouring concrete, and moves chute to direct concrete on forms. Spreads, levels, and smoothes concrete, using rake, shovel, hand or power trowel, hand or power screed, and float. Cleans chipped area, using wire brush, and feels and observes surface to detect rough or uneven surface. Wets surface to prepare for bonding, fills holes and cracks with grout

or slurry, and smoothes, using trowel. Wets concrete surface, and rubs with stone to smooth surface and obtain specified finish. Sprinkles colored marble or stone chips, powdered steel, or coloring powder over surface to produce prescribed finish.

47-2053.00 Terrazzo Workers and Finishers Entry – Mid – Senior level position assuming education and experience prerequisite

Chips, scrapes, and grinds high spots, ridges, and rough projections to finish concrete, using pneumatic chisel, hand chisel, or hand tools. Polishes surface, using polishing or surfacing machine. Pushes roller over surface to imbed chips in surface. Spreads roofing paper on surface of foundation, and spreads concrete onto roofing paper with trowel to form terrazzo base. Produces rough concrete surface, using broom. Spreads, levels, and smoothes concrete, using rake, shovel, hand or power trowel, hand or power screed, and float. Cleans chipped area, using wire brush, and feels and observes surface to detect rough or uneven surface. Wets surface to prepare for bonding, fills holes and cracks with grout or slurry, and smoothes, using trowel. Wets concrete surface, and rubs with stone to smooth surface and obtain specified finish. Sprinkles colored marble or stone chips, powdered steel, or coloring powder over surface to produce prescribed finish. Cuts metal division strips, and presses them into terrazzo base so that top edges form desired design or pattern. Applies muriatic acid to clean surface, and rinses with water. Mixes cement, sand, and water to produce concrete, grout, or slurry, using hoe, trowel, tamper, scraper, or concrete-mixing machine. Signals truck driver to position truck to facilitate pouring concrete, and moves chute to direct concrete on forms. Builds wooden molds, and clamps molds around area to be repaired, using hand tools. Cuts out damaged areas, drills holes for reinforcing rods, and positions reinforcing rods to repair concrete, using power saw and drill. Molds expansion joints and edges, using edging tools, jointers, and straightedge.

47-2061.00 Construction Laborers Entry – Mid level position assuming education and experience prerequisite

Tends pumps, compressors, and generators to provide power for tools, machinery, and equipment or to heat and move materials such as asphalt. Positions, joins, aligns, and seals structural components, such as concrete wall sections and pipes. Digs ditches and levels earth to grade specifications, using pick and shovel. Signals equipment operators to facilitate alignment, movement, and adjustment of machinery, equipment, and materials. Builds and positions forms for pouring concrete and dismantles forms after use, using saws, hammers, nails, or bolts. Grinds, scrapes, sands, or polishes surfaces, such as concrete, marble, terrazzo, or wood flooring, using abrasive tools or machines. Erects and disassembles scaffolding, shoring, braces, and other temporary structures. Mixes concrete, using portable mixer. Loads and unloads trucks and hauls and hoists materials. Measures, marks, and records openings and distances to lay out area to be graded or to erect building structures. Smooth and finishes freshly poured cement or concrete, using float, trowel, screed, or powered cement finishing tool. Applies caulking compounds by hand or with caulking gun to seal crevices. Tends machine that pumps concrete, grout, cement, sand, plaster or stucco through spray-gun for application to ceilings and walls. Lubricates, cleans, and repairs machinery, equipment, and tools. Sprays materials such as water, sand, steam, vinyl, paint, or stucco through hose to clean, coat, or seal surfaces. Razes buildings and salvages useful materials. Mixes ingredients to create compounds, used to cover or clean surfaces. Cleans construction site to eliminate possible hazards. Mops, brushes, or spreads paints, cleaning solutions or other compounds over surfaces to clean or provide protection.

47-2071.00 Paving, Surfacing, and Tamping Equipment Operators Entry – Mid level position assuming education and experience prerequisite

Operates machine or manually rolls surfaces to compact earth fills, foundation forms, and finished road materials, according to grade specifications. Sets up forms and lays out guidelines for curbs, according to written specifications, using string, spray paint, and concrete/water mix. Cleans, maintains, and repairs equipment, according to specifications, using mechanics' hand tools, or reports malfunction to supervisor. Fill tank, hopper, or machine with paving materials. Installs dies, cutters, and extensions to screed onto machine, using hand tools. Drives machine onto truck trailer and drives truck to transport machine to and from job site. Lights burner or starts heating unit of machine and regulates temperature. Monitors machine operation and observes distribution of paving material to adjust machine settings or material flow. Operate machine to spread, smooth, or steel-reinforce stone, concrete, or asphalt. Operate machine to mix and spray binding, waterproofing, and curing compounds. Operates machine to clean or cut expansion joints in concrete or asphalt and to rout out cracks in pavement. Starts machine, engages clutch, pushes and moves levers, and turns wheels to control and guide machine along forms or guidelines. Drives and operates curbing machine to extrude concrete or asphalt curbing.

47-2072.00 Pile-Driver Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Moves hand and foot levers to control hoisting equipment to position piling leads, hoist piling into leads, and position

hammer over piling. Moves levers and turns valves to activate power hammer or raise and lower drophammer, which drives piles to required depth.

47-2073.01 Grader, Bulldozer, and Scraper Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Starts engine, moves throttle, switches, and levers, and depresses pedals to operate machines, equipment, and attachments. Drives equipment in successive passes over working area to achieve specified result, such as grade terrain or remove, dump, or spread earth and rock. Fastens bulldozer blade or other attachment to tractor, using hitches. Greases, oils, and performs minor repairs on tractor, using grease gun, oilcans, and hand tools. Signals operator to guide movement of tractor-drawn machine. Connects hydraulic hoses, belts, mechanical linkage, or power takeoff shaft to tractor. Aligns machine, cutterhead, or depth gauge marker with reference stakes and guidelines on ground or positions equipment following hand signals of assistant.

47-2111.00 Electricians Entry – Mid – Senior level position assuming education and experience prerequisite

Installs electrical wiring, equipment, apparatus, and fixtures, using hand tools and power tools. Diagnoses malfunctioning systems, apparatus, and components, using test equipment and hand tools. Tests electrical systems and continuity of circuits in electrical wiring, equipment, and fixtures, using testing devices, such as ohmmeter, voltmeter, and oscilloscope. Drives vehicle, operates floodlights, and places flares during power failure or emergency. Directs and trains workers to install, maintain, or repair electrical wiring, equipment, and fixtures. Possesses electrician's license or identification card to meet governmental regulations. Constructs and fabricates parts, using hand tools and specifications. Climbs ladder to install, maintain or repair electrical wiring, equipment and fixtures. Prepares sketches of location of wiring and equipment or follows blueprints to determine location of equipment and conformance to safety codes. Reads and assembles electrical wiring, equipment and fixtures, using specifications and hand tools. Maintains and repairs or replaces wiring, equipment and fixtures, using hand tools. Inspects systems and electrical parts to detect hazards, defects, and need for adjustments or repair. Plans layout and installation of electrical wiring, equipment and fixtures consistent with specifications and local codes.

47-2121.00 Glaziers Entry – Mid – Senior level position assuming education and experience prerequisite

Fastens glass panes into wood sash and spreads and smoothes putty around edge of pane with knife to seal joints. Marks outline or pattern on glass, cuts glass, and breaks off excess glass by hand or with notched tool. Installs pre-assembled framework for windows or doors designed to be fitted with glass panels, including stained glass windows, using hand tools. Attaches backing and leveling devices to wall surface, using nails and screws, and cuts mounting strips and moldings to required lengths. Sets glass doors into frame and bolts metal hinges, handles, locks, and other hardware onto glass doors. Measures mirror and dimensions of area to be covered and determines plumb of walls or ceilings, using plumb-line and level. Assembles, fits, and attaches metal-framed glass enclosures for showers or bathtubs to framing around bath enclosure. Moves furniture to clear work site and covers floors and furnishings with drop cloths. Drives truck to installation site and unloads mirrors, equipment, and tools. Loads and arranges mirrors on truck, following sequence of deliveries. Covers mirrors with protective material to prevent damage. Measures, cuts, fits, and presses anti-glare adhesive film to glass or sprays glass with tinting solution to prevent light glare. Attaches mounting strips and moldings to surface and applies mastic cement, putty, or screws to secure mirrors into position.

47-2131.00 Insulation Workers, Floor, Ceiling, and Wall Entry – Mid level position assuming education and experience prerequisite

Fits, wraps, or attaches insulating materials to structures of surfaces, using hand tools or wires, following blueprint specifications. Prepare surfaces for insulation application by brushing or spreading on adhesives, cement, or asphalt or attaching metal pins to surfaces. Evenly distributes insulating materials into small spaces within floors, ceilings, or walls, using blower and hose attachments or cement mortar. Covers, seals or finishes insulated surfaces or access holes with plastic covers, canvas ships, sealant, tape, cement or asphalt mastic. Reads blueprints and selects appropriate insulation, based on the heat retaining or excluding characteristics of the material. Moves controls, buttons, or levers to start blower and regulate flow of materials through nozzle. Measures and cuts insulation for covering surfaces, using tape measure, handsaw, knife or scissors. Fills blower hopper with insulating materials.

47-2132.00 Insulation Workers, Mechanical Entry – Mid – Senior level position assuming education and experience prerequisite

Fits, wraps, or attaches insulating materials to structures of surfaces, using hand tools or wires, following blueprint specifications. Prepare surfaces for insulation application by brushing or spreading on adhesives, cement, or asphalt or attaching metal pins to surfaces. Reads blueprints and selects appropriate insulation, based on the heat retaining or

excluding characteristics of the material. Covers, seals or finishes insulated surfaces or access holes with plastic covers, canvas ships, sealant, tape, cement or asphalt mastic. Evenly distributes insulating materials into small spaces within floors, ceilings, or walls, using blower and hose attachments or cement mortar. Measures and cuts insulation for covering surfaces, using tape measure, handsaw, knife or scissors. Fills blower hopper with insulating materials. Moves controls, buttons, or levers to start blower and regulate flow of materials through nozzle.

47-2141.00 Painters, Construction and Maintenance Entry – Mid level position assuming education and experience prerequisite

Paints surfaces, using brushes, spray gun, or rollers. Cuts stencils, and brushes and sprays lettering and decorations on surfaces. Smooths surfaces, using sandpaper, scrapers, brushes, steel wool, or sanding machine. Sprays or brushes hot plastics or pitch onto surfaces. Removes fixtures, such as pictures and electric switch covers, from walls prior to painting. Covers surfaces with drop cloths or masking tape and paper to protect surface during painting. Burns off old paint, using blowtorch. Reads work order or receives instructions from supervisor or homeowner. Erects scaffolding or sets up ladders to work above ground level. Fills cracks, holes, and joints with caulk putty, plaster, or other filler, using caulking gun or putty knife. Mixes and matches colors of paint, stain, or varnish. Washes and treats surfaces with oil, turpentine, mildew remover, or other preparations. Sands surfaces between coats and polishes final coat to specified finish. Bakes finish on painted and enameled articles in baking oven. Applies paint to simulate wood grain, marble, brick, or stonework.

47-2142.00 Paperhangers Entry – Mid – Senior level position assuming education and experience prerequisite

Applies thinned glue to waterproof porous surfaces, using brush, roller, or pasting machine. Trims rough edges from strips, using straightedge and trimming knife. Aligns and places strips or poster sections of billboard on surface to match adjacent edges. Trims excess material at ceiling or baseboard, using knife. Applies acetic acid to damp plaster to prevent lime from bleeding through paper. Measures walls and ceiling to compute number and length of strips required to cover surface. Fills holes and cracks with plaster, using trowel. Removes paint, varnish, and grease from surfaces, using paint remover and water soda solution. Removes old paper, using water, steam machine, or chemical remover and scraper. Erects and works from scaffold. Smooths rough spots on walls and ceilings, using sandpaper. Staples or tacks advertising posters onto fences, walls, or poles. Marks vertical guideline on wall to align first strip, using plumb bob and chalk line. Smooths strips or poster sections with brush or roller to remove wrinkles and bubbles and to smooth joints. Measures and cuts strips from roll of wallpaper or fabric, using shears or razor. Mixes paste, using paste-powder and water, and brushes paste onto surface.

47-2151.00 Pipelayers Entry – Mid – Senior level position assuming education and experience prerequisite

Grades and levels base of trench, using tamping machine and hand tools. Checks slope, using carpenter's level or lasers. Digs trenches to desired or required depth by hand or using trenching tool. Taps and drills holes into pipe to introduce auxiliary lines or devices. Covers pipe with earth or other materials. Lays out route of pipe, following written instructions or blueprints. Lays pipes in trenches and welds, cements, glues, or otherwise connects pieces together.

47-2152.03 Pipelaying Fitters Entry – Mid – Senior level position assuming education and experience prerequisite

Guides pipe into trench and signals hoist operator to move pipe until specified alignment with other pipes is achieved. Inspects joint to verify uniformity of spacing and alignment of pipe surfaces. Corrects misalignment of pipe, using sledgehammer. Inserts spacers between pipe ends.

47-3011.00 Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters Entry level position assuming education and experience prerequisite

Assists in the preparation, installation, repair or rebuilding of tile, brick or stone surfaces. Removes damaged tile, brick or mortar and prepares installation surfaces, using pliers, chipping hammers, chisels, drills, and metal wire anchors. Applies grout between joints of bricks or tiles, using grouting trowel. Removes excess grout and residue from tile or brick joints with wet sponge or trowel. Cleans installation surfaces, equipment, tools work site, and storage areas, using water, chemical solutions, oxygen lance or polishing machines. Modifies material moving, mixing, grouting, grinding, polishing or cleaning procedures according to the type of installation or materials required. Corrects surface imperfections or fills chipped, cracked or broken bricks or tiles, using fillers, adhesives, and grouting materials. Erects scaffolding or other installation structures. Arranges and stores materials, machines, tools and equipment. Moves or positions marble slabs and ingot covers, using crane, hoist or dolly. Cuts materials to specified size for installation, using power saw or tile cutter. Selects materials for installation, following numbered sequence or drawings. Manually or machine-mixes mortar, plaster and grout, according to standard formulae. Transports materials, tools, and machines to installation site, manually or using conveyance equipment. Applies caulk, sealants or other agents to installed surface.

47-3012.00 Helpers--Carpenters Entry level position assuming education and experience prerequisite

Holds plumb bobs, sighting rods, and other equipment to aid in establishing reference points and lines. Positions and holds timbers, lumber, and paneling in place for fastening or cutting. Hews timbers. Erects scaffolding, shoring, and braces. Selects needed tools, equipment, and materials from storage and transports items to work site. Covers surfaces with laminated plastic covering material. Drills holes in timbers or lumber. Cuts tile or linoleum to fit. Cuts timbers, lumber and/or paneling to specified dimensions. Fastens timbers and/or lumber with glue, screws, pegs, or nails. Spreads adhesives on flooring to install tile or linoleum. Smooths and sands surfaces to remove ridges, tool marks, glue, or caulking. Glues and clamps edges or joints of assembled parts. Cuts and installs insulating or sound-absorbing material.

47-3013.00 Helpers--Electricians Entry level position assuming education and experience prerequisite

Maintains tools and equipment, washes parts, and keeps supplies and parts in order. Raises, lowers, or positions equipment, tools, and materials for installation or use, using hoist, handline, or block and tackle. Trims trees and clears undergrowth along right-of-way. Breaks up concrete to facilitate installation or repair of equipment, using air hammer. Threads conduit ends, connects couplings, and fabricates and secures conduit support brackets, using hand tools. Disassembles defective electrical equipment, replaces defective or worn parts, and reassembles equipment, using hand tools. Strings transmission lines or cables through ducts or conduits, underground, through equipment, or to towers. Examines electrical units for loose connections and broken insulation and tightens connections, using hand tools. Traces out short circuits in wiring, using test meter. Rigs scaffolds, hoists, and shoring, erects barricades, and digs trenches. Solders electrical connections, using soldering iron. Bolts component parts together to form tower assemblies, using hand tools. Drills holes for wiring, using power drill, and pulls or pushes wiring through opening. Measures, cuts, and bends wire and conduit, using measuring instruments and hand tools. Strips insulation from wire ends, using wire stripping pliers, and attaches wires to terminals for subsequent soldering. Transports tools, materials, equipment, and supplies to work site, manually or using hand truck or by driving truck.

47-3014.00 Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons Entry level position assuming education and experience prerequisite

Performs any combination of support duties to assist painter, paperhanger, plasterer, or mason. Pours specified amounts of chemical solutions into stripping tanks. Places articles to be stripped into stripping tanks. Removes articles, such as cabinets, metal furniture, and paint containers, from stripping tanks after prescribed period of time. Fills cracks or breaks in surfaces of plaster articles with putty or epoxy compounds. Smooths surfaces of articles to be painted, using sanding and buffing tools and equipment. Covers surfaces of articles not to be painted with masking tape prior to painting.

47-3015.00 Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters Entry level position assuming education and experience prerequisite

Fits or assists in fitting valves, couplings, or assemblies to tanks, pumps, or systems, using hand tools. Requisitions tools and equipment and selects type and size of pipe. Assists in installing gas burner to convert furnaces from wood, coal, or oil. Disassembles and removes damaged or worn pipe. Fills pipe with sand or resin to prevent distortion, and holds pipes during bending and installation. Cleans shop, work area, and machines, using solvent and rags. Cuts or drills holes in walls to accommodate passage of pipes, using pneumatic drill. Mounts brackets and hangers on walls and ceilings to hold pipes. Immerses pipe in chemical solution to remove dirt, oil, and scale.

47-3016.00 Helpers--Roofers Entry level position assuming education and experience prerequisite

Help roofers by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment.

47-4051.00 Highway Maintenance Workers Entry – Mid level position assuming education and experience prerequisite

Erects, installs, and repairs guardrails, highway markers, button-type lane markers, and snow fences, using hand tools and power tools. Drives truck to transport crew and equipment to work site. Drives truck or tractor equipped with adjustable snowplow and blower unit. Drives tractor with mower attachment to cut grass. Sets signs and cones around work area to divert traffic. Verifies alignment of markers by sight. Blends compounds to form adhesive mixture, using spoon. Measures and marks locations for installation of markers, using tape, string, or chalk. Dumps, spreads, and tamps asphalt, using pneumatic tamper to patch broken pavement.

47-4061.00 Rail-Track Laying and Maintenance Equipment Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Drives vehicle that automatically moves and lays track or rails over section of track to be constructed, repaired, or maintained. Adjusts controls of machines that spread, shape, raise, level, and align track, according to specifications. Turns wheels of machine, using lever controls, to adjust guidelines for track alignments and grades, following



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specifications. Drives graders, tamping machines, brooms, and ballast-cleaning-spreading machines to redistribute gravel and ballast between rails. Lubricates machines, changes oil, and fills hydraulic reservoirs to specified levels. Observes leveling indicator arms to verify levelness and alignment of track.

Strings and attaches wire-guidelines machine to rails to level or align track or rails.

Pushes control to close grasping device on track or rail section to raise or move section to specified location.

Engages mechanism that lays track or rail to specified gauge.

47-5013.00 Service Unit Operators, Oil, Gas, and Mining Entry – Mid – Senior level position assuming education and experience prerequisite

Operates equipment to increase oil flow from producing wells. Assembles and lowers detection instruments into wells having drill pipe, drilling tools, or other obstructions wedged in well. Assembles and operates sound wave generating and detecting mechanisms for determining fluid level in wells. Interprets instrument readings to ascertain depth of obstruction. Prepares reports of services rendered, tools used, and time required. Directs activities of preparing for and drilling around lodged obstacles or specified earth formations with specialized tools and whipstocks. Directs other worker to assemble and connect pipe and hydraulic lines of flushing equipment to wellhead. Directs drilling crew in installation of well-bottom equipment. Directs lowering of specialized equipment to point of obstruction. Observes variations on gauges, mud pumps, and pressure indicators, and listens to equipment to detect faulty operations or unusual conditions. Perforates well casing or sidewall of borehole with explosive charge. Confers with other personnel to gather information regarding size of pipes and tools and borehole conditions in wells. Plans fishing methods and selects tools for removing obstacles, such as liners, broken casing, screens, and drill pipe from wells. Starts pumps that circulate water, oil, or other fluid through well, removing sand and other materials obstructing free flow of oil. Moves controls to back off pipe or to sever pipe at point of obstruction. Analyzes conditions of unserviceable oil or gas wells and directs recovery of lost equipment and other obstacles from boreholes. Operates hoist to lower and raise tools. Operates equipment to remove stuck pipe, casing, tools, or other obstructions from drilling wells, using specialized subsurface tools and instruments.

47-5021.02 Well and Core Drill Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Starts and controls drilling action and lowering of well casing into well bore. Couples additional lengths of drill rod as bit advances. Assembles non-truck-mounted drilling equipment, using hand tools and power tools. Inspects core samples to determine nature of strata, or takes samples to laboratory for analysis. Drives or guides truck-mounted equipment into position, levels and stabilizes rig, and extends telescoping derrick. Lubricates machine, splices worn or broken cables, replaces parts, and builds up and repairs drill bits. Fabricates well casings. Records drilling progress and geological data. Retrieves lost equipment from bore holes, using retrieval tools and equipment. Pours water into well or pumps water or slush into well to cool drill bit and remove drillings. Changes drill bits as needed. Monitors operation of drilling equipment to determine changes in strata or variations in drilling. Withdraws drill rod from hole and extracts core sample.

47-5051.00 Rock Splitters, Quarry Entry – Mid – Senior level position assuming education and experience prerequisite

Inserts wedges and feathers into holes and drives wedges with sledgehammer to split stone from mass. Drills holes along outline with jackhammer. Cuts groove along outline, using chisel. Marks desired dimensions on stone, using rule and chalk line.

47-5071.00 Roustabouts, Oil and Gas Entry – Mid level position assuming education and experience prerequisite

Bolts or nails together wood or steel framework to erect derrick. Digs holes, sets forms, and mixes and pours concrete into forms to make foundations for wood or steel derricks. Unscrews or tightens pipe, casing, tubing, and pump rods, using hand and power wrenches and tongs. Dismantles and assembles boilers and steam engine parts, using hand tools and power tools. Bolts together pump and engine parts. Connects tanks and flow lines, using wrenches.

47-5081.00 Helpers--Extraction Workers Entry level position assuming education and experience prerequisite

Assists workers to extract geological materials, using hand tools and equipment. Unloads materials, devices and machine parts, using hand tools. Drives moving equipment to transport materials and parts to excavation site. Sets-up and adjusts equipment used to excavate geological materials. Organizes materials and prepares site for excavation or boring, using hand tools. Observes and monitors equipment operation during extraction process. Signals workers to start extraction or boring process of geological materials. Repairs and maintains automotive and drilling equipment, using hand tools. Examines and collects geological matter, using hand tools and testing devices. Dismantles extracting and boring equipment used for excavation, using hand tools. Loads materials into gas or well hole, or equipment, using hand tools.

49-9041.00 Industrial Machinery Mechanics Entry – Mid – Senior level position assuming education and experience prerequisite

Confers with operators and observes, tests, and evaluates operation of machinery and equipment to diagnose cause of malfunction. Disassembles machinery and equipment to remove parts and make repairs. Repairs, replaces, adjusts, and aligns components of machinery and equipment.

Examines parts for defects, such as breakage or excessive wear. Fabricates replacement parts. Orders or requisitions parts and materials.

Enters codes and instructions to program computer-controlled machinery. Records repairs and maintenance performed. Repairs and replaces electrical wiring and components of machinery. Welds to repair broken metal parts, fabricate new parts, and assemble new equipment. Test-runs repaired machinery and equipment to verify adequacy of repairs. Cleans and lubricates parts, equipment, and machinery.

49-9042.00 Maintenance and Repair Workers, General Entry – Mid level position assuming education and experience prerequisite

Inspects and tests machinery and equipment to diagnose machine malfunctions. Dismantles and reassembles defective machines and equipment. Installs new or repaired parts. Installs and/or repairs wiring and electrical and electronic components. Installs machinery and equipment. Assembles, installs, and/or repairs pipe systems and hydraulic and pneumatic equipment. Estimates costs of repairs. Records repairs made and costs. Fabricates and repairs counters, benches, partitions, and other wooden structures, such as sheds and outbuildings. Operates cutting torch or welding equipment to cut or join metal parts. Sets up and operates machine tools to repair or fabricate machine parts, jigs and fixtures, and tools. Lays brick to repair and maintain physical structure of establishment. Paints and repairs woodwork and plaster. Assembles, installs, and/or repairs plumbing. Cleans and lubricates shafts, bearings, gears, and other parts of machinery.

49-9043.00 Maintenance Workers, Machinery Entry – Mid level position assuming education and experience prerequisite

Sets up and operates machine and adjusts controls that regulate operational functions to ensure conformance to specifications. Installs, replaces, or changes machine parts and attachments, according to production specifications. Lubricates, oils, or applies adhesive, or other material to machines, machine parts, or other equipment, according to specified procedures. Replaces or repairs metal, wood, leather, glass, or other lining in machine or equipment compartments or containers. Dismantles machine, removes machine parts, and reassembles machine, using hand tools, chain falls, jack, crane, or hoist. Inspects or tests damaged machine parts and marks defective area or advises supervisor of need for repair. Records and maintains production, repair, and machine maintenance information. Marks, separates, ties, aligns, threads, attaches, or inserts material or product preparatory to machine operation or to identify machine process. Measures, mixes, prepares and tests chemical solutions used to clean or repair machinery and equipment, according to product specifications. Communicates with or assists other workers to repair or move machines, machine parts or equipment. Replaces, empties, or replenishes empty machine and equipment containers, such as gas tanks or boxes. Removes hardened material from machine or machine parts, using abrasives, power and hand tools, jackhammer, sledgehammer, or other equipment. Reads work orders and specifications to determine machines and equipment requiring repair or maintenance. Cleans machine and machine parts, using cleaning solvent, cloth, air gun, hose, vacuum, or other equipment. Collects and discards worn machine parts and other garbage to maintain machinery and work areas. Transports machine parts, tools, equipment and other material between work areas and storage, using crane, hoist, or dolly. Inventories and requisitions machine parts, equipment, and other supplies to replenish and maintain stock. Cuts, shapes, smooths, attaches or assembles pieces of metal, wood, rubber, or other material repair and maintenance machines and equipment. Starts machine and observes mechanical operation to determine efficiency and to detect defects, malfunctions, or other machine damage.

49-9061.00 Camera and Photographic Equipment Repairers Entry – Mid – Senior level position assuming education and experience prerequisite

Measures parts to verify specified dimensions/settings, such as camera shutter speed and light meter reading accuracy, using measuring instruments. Adjusts cameras, photographic mechanisms, and equipment, such as range and view finders, shutters, light meters, and lens systems, using hand tools. Examines cameras, equipment, processed film, and laboratory reports to diagnose malfunction, using work aids and specifications. Disassembles equipment to gain access to defect, using hand tools. Calibrates and verifies accuracy of light meters, shutter diaphragm operation, and lens carriers, using timing instruments. Tests equipment performance, focus of lens system, alignment of diaphragm, lens mounts, and film transport, using precision gauges. Fabricates or modifies defective electronic, electrical, and mechanical components, using bench lathe, milling machine, shaper, grinder, and precision hand tools according to specifications. Recommends design changes or upgrades of microfilming, film-developing, and photographic equipment. Requisitions parts and

materials. Records test data and documents fabrication techniques on reports. Cleans and lubricates cameras and polishes camera lenses, using cleaning materials and work aids. Lays out reference points and dimensions on parts and metal stock to be machined, using precision measuring instruments. Installs film in aircraft camera and electrical assemblies and wiring in camera housing, following blueprints, using hand tools and soldering equipment. Assembles aircraft cameras, still and motion picture cameras, photographic equipment, and frames, using diagrams, blueprints, bench machines, hand tools, and power tools. Reads and interprets engineering drawings, diagrams, instructions, and specifications to determine needed repairs, fabrication method and operation sequence.

49-9062.00 Medical Equipment Repairers Entry – Mid – Senior level position assuming education and experience prerequisite

Inspects and tests malfunctioning medical and related equipment, using test and analysis instruments and following manufacturers' specifications. Calibrates and adjusts components and equipment, using hand tools, power tools, measuring devices, and following manufacturers' manuals and troubleshooting techniques. Safety-tests medical equipment and facility's structural environment to ensure patient and staff safety from electrical or mechanical hazards. Maintains various equipment and apparatus, such as patient monitors, electrocardiographs, x-ray units, defibrillators, electrosurgical units, anesthesia apparatus, pacemakers, and sterilizers. Cleans and lubricates equipment, using solvents, rags, and lubricants. Consults with medical or research staff to ensure that equipment functions properly and safely. Logs records of maintenance and repair work and approved updates of equipment as required by manufacturer. Demonstrates and explains correct operation of equipment to medical personnel. Installs medical, dental, and related technical equipment in medical and research facilities. Solders loose connections, using soldering iron. Disassembles malfunctioning equipment and removes defective components. Repairs and replaces defective parts, such as motors, clutches, tubes, transformers, resistors, condensers, and switches, using hand tools.

49-9063.01 Keyboard Instrument Repairers and Tuners Entry – Mid level position assuming education and experience prerequisite

Repairs or replaces defective, broken, or worn parts, using hand tools, power tools, glue, and nails. Disassembles and reassembles instruments and parts to tune and repair, using hand tools and power tools. Removes irregularities from tuning pins, strings, and hammers of piano, using wood block or filing tool. Compares pitch of instruments with specified pitch of tuning tool to tune instrument. Cleans instruments, using vacuum cleaner. Mixes and measures glue. Makes wood replacement parts, using woodworking machines and hand tools. Assembles and installs new pipe organs and pianos in buildings. Inspects and tests parts of pianos, pipe organs, accordions, and concertinas to determine defects, using hand tools, gauges, and electronic testing equipment. Adjusts alignment, string spacing, and striking point of hammers of piano, using wrench, burner, shims, and bushings. Adjusts lips, reeds, or toe hole of organ pipes, using hand tools, to regulate airflow and loudness of sound. Adjusts felt hammers on piano to increase tonal mellowness or brilliance, using sanding paddle, lacquer, or needles.

49-9063.02 Stringed Instrument Repairers and Tuners Entry – Mid – Senior level position assuming education and experience prerequisite

Repairs broken parts, using glue, clamp, and hand press. Strings instrument and adjusts truss and bridge of instrument to obtain specified string tension and height. Refinishes instruments to protect and decorate them, using hand tools, buffing tools, and varnish. Adjusts string tension to tune instrument, using hand tools and electronic tuning device. Disassembles instrument or bow, using hand tools. Removes cracked, worn, or broken parts of instrument, using heated knife and hand tools. Assembles instruments according to specifications, using hand tools. Tests tubes and pickups in electronic amplifier units, and solders parts and connections. Plays instrument to determine pitch. Carves wood replacement parts, such as wedges or plugs, according to the shape and dimensions of the instrument or bow. Inspects musical instruments, such as cellos, violins, guitars, and mandolins, to determine defects. Reassembles instrument or bow with new or repaired part, using glue, hairs, yarn, resin, and clamps.

49-9063.03 Reed or Wind Instrument Repairers and Tuners Entry – Mid – Senior level position assuming education and experience prerequisite

Disassembles instrument parts, such as keys, pistons, and other parts, to tune or repair, using gas torch and hand tools. Files reed until pitch corresponds with standard pitch of tuning bar. Lubricates and reassembles instrument, using hand tools and soldering iron or torch. Removes dents and burrs from metal instruments, using mallet and burnishing tool. Operates bellows to sound metal reed and ascertain its pitch. Shapes old parts and replacement parts to improve tone or intonation, using hand tools, lathe, or soldering iron. Washes metal instruments in lacquer-stripping and cyanide solution to remove lacquer and tarnish. Polishes instrument, using rag and polishing compound, buffing wheel, or burnishing tool. Compares pitch of reed with pitch of tuning bar. Inspects mechanical parts of instrument to determine defects. Replaces worn pads and springs, using hand tools. Repairs cracks in wood or metal instruments, using wire, lathe, filler, clamps, or soldering iron.



JOB TITLES AND ASSOCIATED TASKS Sorted by Cognofile

49-9063.04 Percussion Instrument Repairers and Tuners Entry – Mid – Senior level position assuming education and experience prerequisite

Stretches skin over rim hoop, using hand-tucking tool. Removes dents in tympani, using steel block and hammer. Compares tone of bar with tuned block, stroboscope, or electronic tuner. Cleans, sands, and paints parts of percussion instruments to maintain their condition, in accordance to blueprints and shop drawings. Solders or welds frames of mallet instruments and metal drum parts. Assembles bar onto instruments. Removes material from bar, using band saw, sanding machine, machine grinder, or hand files and scrapers, to obtain the specified tone. Soaks drumhead in water to make it pliable. Cuts new drumhead from animal skin, using scissors. Removes drumhead, using drum key and cutting tools. Places rim hoop back onto drum shell to allow drumhead to dry and become taut. Strikes wood, fiberglass, or metal bars of instruments, such as xylophone or vibraharp, to ascertain tone. Repairs breaks in percussion instruments, such as drums and cymbals, using drill press, power saw, glues, clamps, or other hand tools.

49-9093.00 Fabric Menders, Except Garment Entry – Mid level position assuming education and experience prerequisite

Operates sewing machine to re-stitch defective seams, sew up holes, or replace garment pockets or blanket binding ribbons. Replaces defective shrouds and splices connections between shrouds and harness, using hand tools. Spreads out articles or material and examines for holes, tears, worn areas, and other marked or unmarked defects. Cleans stains from fabric or garment, using spray gun and cleaning fluid. Stamps grommets into canvas, using mallet and punch or eyelet machine. Sewes labels and emblems on articles for identification. Measures and hems curtains, garments, and canvas coverings to size, using tape measure. Sewes fringe, tassels, and ruffles onto drapes and curtains, and buttons and trimming onto garments. Trims edges of cut or torn fabric, using scissors or knife, and stitches together Patches holes, sewes tears and ripped seams, or darns defects in items, using needle and thread or sewing machine. Re-knits runs and replaces broken threads, using latch needle. Repairs holes by weaving thread over them, using needle. Pulls knots to wrong side of garment, using hook.

49-9098.00 Helpers--Installation, Maintenance, and Repair Workers Entry level position assuming education and experience prerequisite

Helps mechanics and repairers maintain and repair vehicles, industrial machinery, and electrical and electronic equipment. Transfers equipment, tools, parts, and other objects to and from workstations and other areas, using hand tools, power tools, and moving equipment. Installs or replaces machinery, equipment, and new or replacement parts and instruments, using hand tools or power tools. Applies protective materials to equipment, components, and parts to prevent defects and corrosion. Positions vehicles, machinery, equipment, physical structures, and other objects, for assembly or installation, using hand tools, power tools, and moving equipment. Builds or erects and maintains physical structures, using hand tools or power tools. Examines and tests machinery, equipment, components, and parts for defects and to ensure proper functioning. Tends and observes equipment and machinery to verify efficient and safe operation. Adjusts and connects or disconnects wiring, piping, tubing, and other parts, using hand tools or power tools. Assembles and disassembles machinery, equipment, components, and other parts, using hand tools and power tools. Furnishes tools, parts, equipment, and supplies to other workers. Cleans or lubricates vehicles, machinery, equipment, instruments, tools, work areas, and other objects, using hand tools, power tools, and cleaning equipment.

51-2011.01 Aircraft Structure Assemblers, Precision Entry – Mid – Senior level position assuming education and experience prerequisite

Installs units, parts, equipment, and components in structural assembly, according to blueprints and specifications, using hand tools and power tools. Locates and marks reference points and holes for installation of parts and components, using jigs, templates, and measuring instruments. Aligns structural assemblies. Positions and aligns subassemblies in jigs or fixtures, using measuring instruments, following blueprint lines and index points. Inspects and tests installed units, parts, and equipment for fit, performance, and compliance with standards, using measuring instruments and test equipment. Cuts, trims, and files parts, and verifies fitting tolerances to prepare for installation. Bolts, screws, or rivets accessories to fasten, support, or hang components and subassemblies. Drills holes in structure and subassemblies, and attaches brackets, hinges, or clips to secure installation or to fasten subassemblies.

51-2011.02 Aircraft Systems Assemblers, Precision Entry – Mid – Senior level position assuming education and experience prerequisite

Aligns, fits, and assembles system components, such as armament, structural, and mechanical components, using jigs, fixtures, measuring instruments, hand tools, and power tools. Tests systems and assemblies for functional performance, and adjusts, repairs, or replaces malfunctioning units or parts. Installs mechanical linkages and actuators, and verifies tension of cables, using tensiometer. Reworks, replaces, realigns, and adjusts parts and assemblies according to

specifications. Reads and interprets blueprints, illustrations, and specifications to determine layout, sequence of operations, or identity and relationship of parts. Measures, drills, files, cuts, bends, and smooths materials to ensure fit and clearance of parts. Cleans, oils, assembles, and attaches system components to aircraft, using hand tools, power tools, and measuring instruments. Examines parts for defects and for conformance to specifications, using precision measuring instruments. Lays out location of parts and assemblies, according to specifications. Assembles and installs parts, fittings, and assemblies on aircraft, using layout tools, hand tools, power tools, and fasteners.

51-2092.00 Team Assemblers Entry – Mid level position assuming education and experience prerequisite

Work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis. May participate in making management decisions affecting the work. Team leaders who work as part of the team should be included.

51-3011.01 Bakers, Bread and Pastry Entry – Mid level position assuming education and experience prerequisite

Weighs and measures ingredients, using measuring cups and spoons. Mixes and cooks pie fillings, and pours fillings into pie shells and tops filling with meringue or cream. Spreads or sprinkles toppings on loaves or specialties and places dough in oven, using long-handled paddle (peel). Mixes ingredients to make icings, decorates cakes and pastries, and blends colors for icings, shaped ornaments, and statuary. Cuts, peels, and prepares fruit for pie fillings. Covers filling with top crust; places pies in oven; and adjust drafts or thermostatic controls to regulate oven temperatures.

Checks production schedule to determine variety and quantity of goods to bake. Molds dough in desired shapes, places dough in greased or floured pans, and trims overlapping edges with knife. Mixes ingredients to form dough or batter by hand or using electric mixer. Rolls and shapes dough, using rolling pin and cuts dough in uniform portions with knife, divider, cookie cutter.

51-3011.02 Bakers, Manufacturing Entry – Mid level position assuming education and experience prerequisite

Measures flour and other ingredients to prepare batters, dough, fillings, and icings, using scale and graduated containers. Observes color of products being baked and adjusts oven temperature. Applies glaze, icing, or other topping to baked goods, using spatula or brush. Develops new recipes for cakes and icings. Rolls, cuts, and shapes dough to form sweet rolls, pie crusts, tarts, cookies, and related products prior to baking. Dumps ingredients into mixing-machine bowl or steam kettle to mix or cook ingredients according to specific instructions. Places dough in pans, molds, or on sheets, and bakes dough in oven or on grill. Decorates cakes.

51-3091.00 Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Observes temperature, humidity, and pressure gauges, or product, and adjusts controls and turns valves to maintain prescribed operating conditions. Cleans equipment, with steam, hot water, and hose. Takes sample of product during or after process for laboratory analysis. Installs equipment, such as spray unit, cutting blades, or screens, using hand tools. Pushes racks or carts to transfer product to storage or for further processing. Clears or dislodges blockages in bins, screens, or other equipment, using pole, brush, or mallet. Observes and listens for machine malfunctions, and notifies supervisor when corrective actions fail. Records production data, such as weight and amount of product processed, type of product, and time and temperature of processing. Reads work order to determine quantity and type of product to be baked, dried, or roasted. Fills or removes product from trays, carts, hoppers, or equipment, using scoop, peel, or shovel, or by hand. Weighs product, using scale hopper or scale conveyor. Observes, feels, or tastes products after processing to ensure products conform to standards. Smooths out product in bin, tray, or conveyor, using rake or shovel. Tests product for moisture content, using moisture meter. Opens valve, discharge gates, or hopper chutes, to load or remove product from oven or equipment. Sets temperature and time controls, lights ovens or gas burners, and starts equipment, such as conveyors, blowers, driers, or pumps.

51-3092.00 Food Batchmakers Entry – Mid level position assuming education and experience prerequisite

Calculates ingredient amounts to formulate or modify recipes to produce food product of specific flavor, texture, clarity, bouquet, and color. Homogenizes or pasteurizes material to prevent separation of substances or to obtain prescribed butterfat content. Separates, spreads, kneads, spins, casts, cuts, or rolls food product by hand or using machine. Gives directions to other workers who are assisting in batchmaking process. Records amounts of ingredients used, test results, and time cycles. Grades food product according to government regulations or according to type, color, bouquet, and moisture content. Cools food product batch on slabs or in water-cooled kettle. Tests food product sample for moisture content, acidity level, or butterfat content. Examines, feels, and tastes product to evaluate color, texture, flavor, and bouquet. Mixes or blends ingredients, according to recipe, using paddle or agitator. Stirs and cooks ingredients at specified temperatures. Operates refining machine to reduce size of cooked batch. Measures and weighs ingredients,

using English or metric measures and balance scales. Determines mixing sequence, based on knowledge of temperature effects and solubility and miscibility properties of specific ingredients. Fills processing or cooking container, such as water-cooled kettle, steam-jacketed rotating cooker, pressure cooker, or vat, with ingredients, following recipe.

51-3093.00 Food Cooking Machine Operators and Tenders Entry – Mid level position assuming education and experience prerequisite

Starts conveyers, machines or pumps and sets temperature, pressures and time controls. Records production and test data, such as processing steps, temperature and steam readings, cooking time, batches processed, and test results. Cleans and washes equipment, using water hoses, cleaning or sterilizing solutions or rinses. Removes cooked material or products from equipment. Notifies or signals other workers to operate equipment or when processing complete. Examines sample of product, tests color, content, consistency, viscosity, acidity, or specific gravity, and removes impurities from product. Pours, adds or loads prescribed quantities of ingredients or products into cooking equipment, manually or using hoist. Measures or weighs prescribed ingredients, using scales or measuring containers. Listens for malfunction alarms, shuts down equipment, and notifies supervisor. Places products on conveyor or cart and monitors flow. Observes gauges, dials and product texture or color and adjusts controls to maintain appropriate temperature, pressure and flow of ingredients. Admits required amounts of water, steam, cooking oils or compressed air into equipment. Turns valves or starts pumps to drain product from equipment and transfer to storage, cooling or further processing areas. Reads recipes or formulae to determine ingredients or quantities of ingredients needed. Operates auxiliary machines and equipment such as grinders, canners and molding presses, to prepare or further process products. Operates and controls equipment such as, kettles, cookers, vats and tanks, to cook ingredients or prepare products for further processing. Activates agitators and paddles to mix or stir ingredients and stops machine when ingredients are thoroughly mixed.

51-4023.00 Rolling Machine Setters, Operators, and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Starts operation of rolling and milling machines to flatten, temper, form, and reduce sheet metal sections and produce steel strips. Installs equipment, such as guides, guards, gears, cooling equipment and rolls, using hand tools. Examines, inspects, measures, and feels raw materials and finished product to verify conformance to specifications, visually or using measurement instruments. Fills oil cups, adjusts valves, and observes gauges to control flow of metal coolant and lubricants onto workpiece. Signals and assists other workers to remove and position equipment, fill hoppers, and feed materials into machine. Directs and trains other workers to change rolls, operate mill equipment, remove coils and cobbles, and band and load material. Records mill production on schedule sheet. Removes scratches and polishes roll surface, using polishing stone and electric buffer. Disassembles sizing mills removed from rolling line, and sorts and stores parts. Activates shear and grinder to trim workpiece, cut steel strips, and monitor forming of gears to specified length and diameter. Threads or feeds sheets or rods through rolling mechanism, or starts and controls mechanism that automatically feeds steel into rollers. Calculates draft space and roll speed for each mill stand to plan rolling sequence and specified dimensions and temper. Reads rolling order and mill schedules to determine setup specifications, work sequence, product dimensions, and installation procedures. Positions, aligns, and secures arbor, spindle, coils, mandrel, dies, and slitting knives onto machine. Resets, adjusts, and corrects machine set-up to reduce thickness, reshape products, and eliminate product defects. Monitors machine cycles and mill operation to detect jamming and to ensure fabricated products conform to specifications. Sets distance points between rolls, guides, meters, and stops, according to specifications. Selects rolls, dies, roll stands, and chucks from data charts to form specified contours and to fabricate products. Manipulates controls and observes dial indicators to monitor, adjust, and regulate speed of machine mechanisms.

51-4031.01 Sawing Machine Tool Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Turns controls to set cutting speed, feed rate, and table angle for specified operation. Scribes reference lines on workpiece as guide for sawing operations, according to blueprints, templates, sample parts, or specifications. Replaces defective blades or wheels, using hand tools. Places workpiece on cutting table, manually or using hoist, and clamps workpiece into position. Measures completed workpiece to verify conformance to specifications, using micrometers, gauges, calipers, templates, or rulers. Marks identifying data on workpieces. Examines completed workpieces for defects, such as chipped edges and marred surfaces, and sorts defective pieces according to defect. Removes housings, feed tubes, tool holders, and other accessories to replace worn or broken parts, such as springs and bushings. Sharpens dulled blades, using bench grinder, abrasive wheel, or lathe. Reads work order for specifications, such as materials to be used, location of cutting lines, and dimensions and tolerances. Positions guides, stops, holding blocks, or other fixtures to secure and direct workpiece, using hand tools and measuring devices. Sets blade tension, height, and angle to perform prescribed cut, using wrench. Turns valves to start flow of coolant against cutting area and to start airflow, which blows cuttings away from kerf. Selects blade according to

specifications and installs on machine, using hand tools. Starts machine and feeds workpiece against blade, guiding along layout lines, to cut workpiece to specified dimensions.

51-4031.02 Punching Machine Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Activates machine and observes operation to detect misalignment or machine malfunctions. Installs, aligns and locks specified punches, dies and cutting blades in ram or bed of machine, using gauges and hand tools. Sets stops or guides or installs jigs or fixtures for positioning successive workpieces. Measures workpiece with rule or tape, or traces from template and marks location with scribe, soapstone, or centerpunch. Inspects workpieces for conformance to specifications, visually or using gauges or templates, scale, compass and adjusts machine to correct errors. Cleans and lubricates machines. Reads job order to determine location of holes or cutting lines. Sets controls or installs gears to synchronize action of feed bar or rollers. Adjusts ram stroke of press to specified length, using hand tools. Positions, aligns, and secures workpiece against fixtures or stops on machine bed or on die.

51-4031.03 Press and Press Brake Machine Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Sets stops on machine bed, changes dies, and adjusts components, such as ram or power press, when making multiple or successive passes. Measures workpiece and verifies dimensions and weight, using micrometer, template, straightedge, and scale. Plans sequence of operations, applying knowledge of physical properties of metal. Lifts, positions, and secures workpiece between dies of machine, using crane and sledge. Grinds out burrs and sharp edges, using portable grinder, speed lathe, and polishing jack. Hand forms, cuts, or finishes workpiece, using tools, such as table saw, hand sledge and anvil, flaring tool, and gauge. Lubricates workpiece with oil. Preheats workpiece, using heating furnace or hand torch. Inspects workpiece for defects. Installs, aligns, and secures gears, holding fixtures, dies to machine bed, using gauges, templates, feelers, shims, and hand tools. Operates power press, power brake, apron brake, swaging machine, foot-powered press, hydraulic press, or arbor press according to specifications. Selects and positions flat, block, radius, or special purpose die sets into ram and bed of machine, using hoist, crane, measuring instruments and hand tools.

51-4031.04 Shear and Slitter Machine Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Installs and aligns knives, disk cutters or fixtures to shear, bevel, or trim fabricated items. Hones cutters with oilstone to remove nicks. Observes machine operation and examines cut strips for flatness, holes, burrs, and surface defects. Lubricates and cleans machine. Lifts workpiece manually or by hoist, and positions and secures against guides and stops. Lays out cutting lines on metal stock to obtain maximum number of pieces from stock. Measures dimensions of workpiece, using tape, gauge, template, or rule and square, for conformance to specifications. Tests and adjusts cutting speed and action, according to specified length of product, using gauges and hand tools. Operates shear or slitter that cuts or shears metal, such as plates, sheets, slabs, billets, or bars, to size. Reads production schedule to determine setup or adjustment of equipment. Threads end of metal coil from reel through slitter and secures ends on recoiler. Selects, cleans, and installs spacers, rubber sleeves, and cutter on arbors. Starts machine, adjusts blade and controls, using wrenches, rule, gauge, or template, and monitors operation.

51-4032.00 Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Operates single or multiple spindle drill press to bore holes to perform machining operations on metal, nonmetallic, or plastic workpieces. Studies machining instructions to determine dimensional and finish specifications, sequence of operation, setup, and tooling requirements. Installs tool in spindle. Selects cutting tool according to instructions and knowledge of metal properties. Operates tracing attachment to duplicate contours from templates or models. Lifts workpiece either manually or with hoist onto machine table, or directs crane operator to lift and position workpiece. Verifies conformance of machined work to specifications, using measuring instruments, such as calipers, micrometers, and fixed and telescoping gauges. Positions and secures workpiece on table with bolts, jigs, clamps, shims, or other holding devices, using machining hand tools. Lays out reference lines and machining locations on work, applying knowledge of shop math and layout techniques, using layout tools.

51-4033.01 Grinding, Honing, Lapping, and Deburring Machine Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Moves machine controls to index workpiece and adjust machine for pre-selected operational settings. Activates machine start-up switches to grind, lap, hone, debar, shear, or cut workpiece, according to specifications. Computes machine indexing and settings for specified dimension and base reference points. Observes and adjusts machine operation. Mounts and positions tools in machine chuck, spindle, or other tool holding device to specifications, using hand tools.

Grinds, sharpens, or hones tools, dies, and products to prescribed dimensions, using power tools, hand tools, and precision measuring instruments. Lifts and positions workpiece manually or with hoist, and secures in hopper, on machine table, faceplate or chuck, using clamps. Inspects or measures workpiece, using measuring instruments, such as gauges or micrometers for conformance to specifications. Maintains stock of machine parts and machining tools. Repairs or replaces machine parts, using hand tools or notifies engineering personnel when corrective action is required. Brushes or sprays lubricating compound on workpiece or turns valve handle and directs flow of coolant against tool and workpiece. Measures workpieces and lays out work, using precision measuring devices. Studies blueprints, work order, or machining instructions to determine product dimensions, tooling, and to plan operational sequence. Selects machine tooling to be used in machine operation, utilizing knowledge of machine and production requirements. Threads and hand feeds materials through machine cutters or abraders.

51-4033.02 Buffing and Polishing Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Sets and adjusts machine controls according to product specifications, utilizing knowledge of machine operation. Repairs or replaces machine parts to maintain machine in operational condition. Removes workpiece and examines finish or luster to ensure surface meets specifications. Starts and observes machine operation for conformance to specifications. Selects buffing or polishing tools and positions and mounts tools to machine tool, chuck, or jig, using hand tools. Reads work order to determine parts to be buffed or polished. Holds stick of buffing compound or turns valve and depresses pedal to administer coolant to workpiece surface. Selects and attaches workpiece holding fixture to drive mechanism, and positions or clamps workpiece to fixture.

51-4034.00 Lathe and Turning Machine Tool Setters, Operators, and Tenders Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Installs holding fixtures, cams, gears, and stops to control stock and tool movement, using hand tools, power tools, and measuring instruments. Moves toolholder manually or by turning hand wheel, or engages automatic feeding mechanism, to feed tools to and along workpiece. Selects cutting tools and tooling instructions, according to knowledge of metal properties and shop mathematics, or written specifications. Positions, secures, and aligns cutting tools in tool holders on machine, using hand tools, and verifies their position with measuring instruments. Observes operation and stops machine to inspect finished workpiece and verify conformance with specifications of first-run, using measuring instruments. Mounts attachments, such as relieving or tracing attachments, to perform operations, such as duplicating contours of template or trimming workpiece. Studies blueprint, layout, or chart, to visualize work and determine materials needed, sequence of operations, dimensions, and tooling instructions. Computes unspecified dimensions and machine settings, using knowledge of metal properties and shop mathematics. Lifts metal stock or workpiece manually or using hoist, and positions and secures it in machine, using fasteners and hand tools. Replaces worn tools and sharpens dull cutting tools and dies. Moves controls to set cutting speeds and depths, and feed rates and to position tool in relation to workplace. Cranks machine through cycle, stopping to adjust tool positions and machine controls, to ensure specified timing, clearance, and tolerances. Starts machine, and turns valve handle to direct flow of coolant on work area or coats disk with spinning compound.

51-4035.00 Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Selects and installs cutting tool, stylus, and other accessories according to specifications, using hand tools or power tools. Moves controls to set cutting specifications, position cutting tool and workpiece in relation to each other, and start machine. Moves cutter or material manually or by turning hand wheel, or engages automatic feeding mechanism to mill workpiece to specifications. Observes machine operation and adjusts controls to ensure conformance with specified tolerances. Selects cutting speed, feed rate, and depth of cut, applying knowledge of metal properties and shop mathematics. Verifies alignment of workpiece on machine, using measuring instruments, such as rules, gauges, or calipers. Turns valve to begin and regulate the flow of coolant on work area. Studies blueprint, layout, sketch, or other specifications to determine materials needed, sequence of operations, dimensions, and tooling instructions. Computes dimensions, tolerances, and angles, of workpiece or machine according to specifications and knowledge of metal properties and shop mathematics. Positions and secures workpiece on machine, using holding devices, measuring instruments, hand tools, and hoists. Verifies conformance of finished workpiece to specifications, using measuring instruments, such as microscopes, gauges, calipers, and micrometers. Removes workpiece and template or model from machine. Mounts attachments and other tools, such as pantograph, engraver, or router, to perform other operations, such as drilling or boring. Replaces worn tools, using hand tools. Sharpens dull tools, using bench grinder. Makes templates or cutting tools.
Records production output.

51-4041.00 Machinists Entry – Mid – Senior level position assuming education and experience prerequisite

Studies sample parts, blueprints, drawings, and engineering information to determine methods and sequence of operations to fabricate product. Assembles parts into completed units, using jigs, fixtures, hand tools, and power tools. Calculates and sets controls to regulate machining, or enters commands to retrieve, input, or edit computerized machine control media. Measures, examines, and tests completed units to detect defects and ensure conformance to specifications. Operates brazing, heat-treating, and welding equipment to cut, solder, and braze metal. Cleans, lubricates, and maintains machines, tools, and equipment to remove grease, rust, stains, and foreign matter. Cuts and shapes sheet metal and heats and bends metal to specified shape. Observes and listens to operating machines or equipment to diagnose machine malfunction and determine need for adjustment or repair. Evaluates experimental procedures and recommends changes or modifications for efficiency and adaptability to setup and production. Tests experimental models under simulated operating conditions for such purposes as development, standardization, and feasibility of design. Designs fixtures, tooling, and experimental parts to meet special engineering needs. Confers with engineering, supervisory, and manufacturing personnel to exchange technical information. Establishes work procedures for fabricating new structural products, using variety of metalworking machines. Installs experimental parts and assemblies, such as hydraulic systems, electrical wiring, lubricants, and batteries into machines and mechanisms. Dismantles machine or equipment, using hand tools and power tools, to examine parts for defect or to remove defective parts. Installs repaired part into equipment and operates equipment to verify operational efficiency. Lays out and verifies dimensions of parts, using precision measuring and marking instruments and knowledge of trigonometry. Fabricates, assembles, and modifies tooling, such as jigs, fixtures, templates, and molds or dies to produce parts and assemblies. Operates metalworking machine tools, such as lathe, milling machine, shaper, or grinder to machine parts to specifications. Selects, aligns, and secures holding fixtures, cutting tools, attachments, accessories, and materials onto machines.

51-4051.00 Metal-Refining Furnace Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Manipulates controls to ignite burners, adjust fuel mixtures, open and close furnace doors, or to load and discharge materials into or from furnace. Regulates supply of fuel and air or controls flow of electric current and water coolant to heat furnaces. Observes color and fluidity of molten metal and obtains test sample of metal from furnace or kettle for analysis. Sprinkles chemicals over molten metal to bring impurities to surface and removes impurities, using strainers. Inspects furnace and equipment for defects and wear and directs work-crew in cleaning and repairing furnace walls and flooring. Draws smelted metal samples from furnace for analysis and calculates type and amount of material required to correct smelting process. Scrapes accumulations of metal oxides from floors, molds, and crucibles and sifts and stores for reclamation. Weighs materials to be charged into furnace or to maintain prescribed weight, using scales. Records data and maintains production logs. Examines and prepares material to load into furnace, including cleaning, crushing, or applying chemicals, using crushing machine, shovel, rake, or sprayer. Analyzes metal test sample, according to specific instructions and for specific and for specific element content. Drains, transfers, or removes molten metal from furnace or into molds by hoist or pumps or ladles. Observes inside of furnace operations by television screen and operates controls to move or discharge metal workpiece. Observes air and temperature gauges or metal color and turns fuel valves or adjusts controls to maintain required temperature. Kindles fire and shovels fuels and other materials into furnaces or onto conveyors by hand, with hoists, or by directing crane operator.

51-4052.00 Pourers and Casters, Metal Entry – Mid – Senior level position assuming education and experience prerequisite

Pours molten metal into molds and forms, using ladle. Turns valves to circulate water through core or sprays water on filled molds to cool and solidify metal. Assembles and imbeds cores in casting frames, using hand tools and equipment. Collects samples or signals workers to sample metal for analysis. Removes metal ingots or cores from molds, using hand tools, cranes, and chain hoists. Transports metal ingots to storage areas, using forklift. Repairs and maintains metal forms and equipment, using hand tools, sledges, and bars. Stencils identifying information on ingots and pigs, using special hand tools. Examines molds to ensure they are clean, smooth, and properly coated. Loads specified amount of metal and flux into furnace or clay crucible. Skims slag or removes excess metal from ingots or equipment, using hand tools, strainers, rakes, or burners, and recycles scrap. Positions equipment or signals workers to position equipment such as ladles, grinding wheels, or crucibles. Reads temperature gauges, observes color changes, and adjusts furnace flame, torch, or electrical heating unit to melt metal. Adds metal to molds to compensate for shrinkage.

51-4061.00 Model Makers, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Sets up and operates machines, such as lathes, drill presses, punch presses, or band saw, to fabricate prototypes or models. Studies blueprint, drawings, or sketches, and computes dimensions for laying out materials and planning model

production. Aligns, fits, and joins parts, using bolts or screws or by welding or gluing. Wires and solders electrical and electronic connections and components. Assembles mechanical, electrical, and electronic components into models or prototypes, using hand tools, power tools, and fabricating machines. Records specifications, production operations, and final dimensions of model for use in establishing operating standards and machinery procedures. Consults and confers with engineering personnel to discuss developmental problems and recommend modifications to correct or improve performance of product. Makes bridges, plates, wheels, cutting teeth on wheels and pinions, and threaded screws. Devises and constructs own tools, dies, molds, jigs, and fixtures, or modifies existing tools and equipment. Inspects and tests model or other product to verify conformance to specifications, using precision measuring instruments or circuit tester. Reworks or alters component model or parts as required to ensure performance of equipment or that parts meet standards. Fabricates metal or plastic parts, using hand tools. Grinds, files, and sands parts to finished dimensions. Drills, countersinks, and reams holes in parts and assemblies for bolts, screws, and other fasteners, using power tools. Lays out and marks reference points and dimension on materials, using measuring instruments and drawing or scribing tools. Cuts, shapes, and forms metal parts, using lathe, power saw, snips, power brakes and shear, files, and mallets. Determines fixtures, machines, tooling, and sequence of operations to fabricate parts, dies, and tooling, according to drawings and sketches.

51-4062.00 Patternmakers, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Sets up and operates machine tools, such as milling machines, lathes, drill presses, and grinders, to machine castings or pattern. Operates welding equipment to weld pattern together. Cleans and fine finishes pattern or template, using emery cloth, files, scrapers, and power grinders. Marks identification numbers or symbols onto pattern or template. Repairs and reworks templates and patterns. Covers or sprays pattern used in producing plastic with plastic-impregnated fabric or coat of sealing lacquer or wax. Constructs platforms, fixtures, and jigs for holding and placing patterns. Makes templates or files for own use in inspection and finishing of particular shape. Assembles pattern sections, using hand tools, bolts, screws, rivets, or glue. Studies blueprint of part to be cast or pattern to be made, computes dimensions, and plans sequence of operations. Designs and develops template or pattern according to work orders, sample parts, or mockups. Lays out and draws or scribes pattern onto material, using compass, protractor, ruler, scribe, or other instruments. Verifies conformance of pattern or template dimensions to specifications, using measuring instruments such as calipers, scales, and micrometers. Cuts, trims, shapes, and forms patterns or templates, using hand tools and power tools.

51-4071.00 Foundry Mold and Coremakers Entry – Mid – Senior level position assuming education and experience prerequisite

Forms and assembles slab cores around pattern and positions wire in mold sections to reinforce mold, using hand tools and glue. Cuts spouts, runner holes, and sprue holes into mold. Positions patterns inside mold sections and clamps sections together. Lifts upper mold section from lower and removes molded patterns. Cleans and smoothes molds, cores, and core boxes, and repairs surface imperfections. Moves and positions workpieces, such as mold sections, patterns, and bottom boards, using cranes, or signals others to move workpieces. Pours molten metal into mold, manually or using crane ladle. Rotates sweep board around spindle to make symmetrical molds for convex impressions. Operates ovens to bake cores or furnaces to melt, skim, and flux metal. Sprinkles or sprays parting agent onto pattern and mold sections, to facilitate removal of pattern from mold. Sifts sand and packs sand into mold sections, core box, and pattern contours, using hand or pneumatic ramming tools. Positions cores into lower section of mold and reassembles mold for pouring.

51-4072.01 Plastic Molding and Casting Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Positions, aligns, and secures assembled mold, mold components, and machine accessories onto machine press bed, and attaches connecting lines. Presses button or pulls lever to activate machine to inject dies and compress compounds to form and cure specified products. Sets machine controls to regulate molding temperature, volume, pressure, and time, according to knowledge of plastics and molding procedures. Installs dies onto machine or press and coats dies with parting agent, according to work order specifications. Reads specifications to determine setup and prescribed temperature and time settings to mold, form, or cast plastic materials. Observes and adjusts machine set up and operations to eliminate production of defective parts and products. Measures and visually inspects products for surface and dimension defects, using precision measuring instruments, to ensure conformance to specifications. Mixes catalysts, thermoplastic materials, and coloring pigments according to formula, using paddle and mixing machine. Repairs and maintains machines and auxiliary equipment, using hand tools and power tools. Trims excess material from part, using knife, and grinds scrap plastic into powder for reuse. Removes finished or cured product from dies or mold, using hand tools and air

hose. Weighs premixed compounds and dumps compound into die well or fills hoppers of machines that automatically supply compound to die.

51-4072.02 Plastic Molding and Casting Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts machine that automatically liquefies plastic material in heating chamber, injects liquefied material into mold, and ejects molded product. Turns valves and dials of machines to regulate pressure and temperature, to set press-cycle time, and to close press. Observes continuous operation of automatic machine and width and alignment of plastic sheeting to ensure side flanges. Pulls level and toggle latches to fill mold and regulate tension on sheeting and to release mold covers. Dumps plastic powder, preformed plastic pellets, or preformed rubber slugs into hopper of molding machine. Feels stiffness and consistency of molded sheeting to detect machinery malfunction. Breaks seals that hold plastic product in molds, using hand tool, and removes product from mold. Heats plastic material prior to forming product or cools product after processing to prevent distortion. Weighs prescribed amounts of material for molded part and finished product to ensure specifications are maintained. Removes product from mold or conveyor, and cleans and reloads mold. Positions mold frame to correct alignment and tubs containing mixture on top of mold to facilitate loading of molds. Examines molded product for surface defects, such as dents, bubbles, thin areas, and cracks. Fills tubs, molds, or cavities of machine with plastic material in solid or liquid form prior to activating machine. Trims flashing from product. Signals coworker to synchronize feed of materials into molding process. Throws flash and rejected parts into grinder machine to be recycled. Reports defect in molds to supervisor. Stacks molded parts in boxes or on conveyor for subsequent processing or leaves parts in mold to cool. Mixes and pours liquid plastic into rotating drum of machine that spreads, hardens, and shapes mixture. Observes meters and gauges to verify specified temperatures, pressures, and press-cycle times.

51-4072.03 Metal Molding, Coremaking, and Casting Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Moves controls to start, set, or adjust casting, molding, or pressing machines. Repairs or replaces worn or defective machine parts and dies. Obtains and moves specified pattern to work station, manually or using hoist, and secures pattern to machine, using wrenches. Removes castings from dies and dips castings in water to cool, using pliers or tongs. Preheats die sections with torch or electric heater. Stacks and mounts rotor core laminations over keyed mandrel of casting machine, and removes and stamps rotor with identifying data. Lines cylinder pot with asbestos strips and disk to prevent chilling. Loads metal ingots or aluminum bars into melting furnace, and transfers molten metal to reservoir of die casting machine. Connects water hose to cooling system of die, using hand tools. Cleans and lubricates casting machine and dies, using air hose and brushes. Inspects castings and core slots for defects, using fixed gauges. Loads die sections into machine, using equipment such as chain fall or hoist, and secures in position, using hand tools. Pours molten metal into cold-chamber machine or cylinders, using hand ladle.

51-4072.04 Metal Molding, Coremaking, and Casting Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts and operates furnace, oven, die casting, coremaking, metal molding, or rotating machines to pour metal or create molds and casts. Positions ladles or pourers and adjusts controls to regulate the flow of metal, sand, or coolant into mold. Removes casting from mold, mold from press, or core from core box, using tongs, pliers, hydraulic ram, or by inversion. Pours or loads metal or sand into melting pot, furnace, mold, core box or hopper, using shovel, ladle, or machine. Observes and records data from pyrometers, lights, and gauges to monitor molding process and adjust furnace temperature. Signals or directs other workers to load conveyor, spray molds, or remove ingots. Requisitions molds and supplies and inventories and records finished products. Weighs metals and powders and computes amounts of materials necessary to produce mixture of specified content. Smooths and cleans inner surface of mold, using brush, scraper, air hose, or grinding wheel, and fills imperfections with refractory material. Sprays, smokes, or coats molds with compounds to lubricate or insulate mold, using acetylene torches or sprayers. Skims or pours dross, slag, or impurities from molten metal, using ladle, rake, hoe, spatula, or spoon. Assembles shell halves, patterns, and foundry flasks, and reinforces core boxes, using glue, clamps, wire, bolts, rams, or machines. Inspects metal casts, and molds for cracks, bubbles, or other defects and measures castings to ensure specifications met. Repairs or replaces damaged molds, pipes, belts, chains, or other equipment, using hand tools, hand-powered press, or jib crane. Cleans, glues, and racks cores, ingots, or finished products for storage. Cuts spouts and pouring holes in molds and sizes hardened cores, using saws. Fills core boxes and mold patterns with sand or powders, using ramming tools or pneumatic hammers, and removes excess. Positions, aligns, and secures molds or core boxes in holding devices or under pouring spouts and tubes, using hand tools.

51-4072.05 Casting Machine Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Sets up matrices in assembly stick by hand according to specifications. Stops machine when galley is full or when strip is completed. Inserts and locks galley or matrix case into place on machine. Positions composing stick to length of line specified in casting instructions. Forwards galley to appropriate personnel for proofing. Removes and stores assembly stick, controller reel, and matrix case. Places reel of controller paper on holder, threads around reels, and attaches to winding roll. Starts machine and monitors operation for proper functioning.

51-4111.00 Tool and Die Makers Entry – Mid – Senior level position assuming education and experience prerequisite

Studies blueprints or specifications and visualizes shape of die, part, or tool. Measures, marks, and scribes metal or plastic stock to lay out machining, using instruments, such as protractors, micrometers, scribes, and rulers. Lifts, positions, and secures machined parts on surface plate or worktable, using hoist, vises, v-blocks, or angle plates. Verifies dimensions, alignments, and clearances of finished parts, using measuring instruments, such as calipers, gauge blocks, micrometers, and dial indicators. Sets pyrometer controls of heat-treating furnace, and feeds or places parts, tools, or assemblies into furnace to harden. Designs tools, jigs, fixtures, and templates for use as work aids. Casts plastic tools or parts, or tungsten-carbide cutting tips, using pre-made molds. Cuts, shapes, and trims blank or block to specified length or shape, using power saws, power shears, rule, and hand tools. Fabricates saw blades, using power roller to straighten blade stock, punch press to cut teeth, and power grinder to sharpen teeth. Connects wiring and hydraulic lines to install electrical and hydraulic components. Inspects die for smoothness, contour conformity, and defects by touch or visually, using loupe or microscope. Operates power press to test completed dies, and applies pigment to die to indicate high spots which require reworking. Sets up and operates drill press to drill and tap holes in parts for assembly. Repairs or modifies tools and dies, using machine tools and hand tools. Fits and assembles parts, using bolts, glue, and other fasteners, and hand tools, such as hammers and wrenches. Smooths and polishes flat and contoured surfaces of parts or tools, using scrapers, abrasive stones, files, emery cloth, or power grinder. Sets up and operates machine tools, such as lathes, milling machines, shapers, and grinders, to machine parts. Computes dimensions of assembly and plans sequence of operations.

51-4191.01 Heating Equipment Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Mounts fixtures and industrial coil on machine and workpieces in fixture, using hand tools. Replaces worn dial-feed, burner and conveyor parts, using hand tools. Crushes random samples between fingers to determine hardness. Instruct new workers in machine operation. Sets frequency of current and automatic timer. Estimates flame temperature and heating cycle based on degree of hardness required and metal to be treated. Reads work order to determine processing specifications. Visually examines or tests objects, using hardness testing equipment, to determine flame temperature and degree of hardness. Starts conveyors and dial feeder plates, and turns setscrews in nozzles to direct flames, which anneal specific area of object. Lights gas burners and adjusts flow of gas and coolant water.

51-4191.02 Heat Treating, Annealing, and Tempering Machine Operators and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Sets automatic controls, observes gauges, and operates gas or electric furnace used to harden temper, or anneal metal parts. Covers parts with charcoal before inserting in furnace to prevent discoloration caused by rapid heating. Cleans oxides and scale from parts or fittings, using steam spray or immersing parts in chemical and water baths. Signals forklift operator to deposit or extract containers of parts into and from furnaces and quenching rinse tanks. Tests parts' for hardness, using hardness testing equipment, and stamps heat treatment identification mark on part, using hammer and punch. Examines parts to ensure metal shade and color conform to specifications, utilizing knowledge of metal heat-treating. Removes parts from furnace after specified time and air dries or cools parts in water or oil brine or other baths. Adjusts speed and operates continuous furnace through which parts are passed by means of reels and conveyors. Sets up and operates die-quenching machine to prevent parts from warping. Reads production schedule to determine processing sequence and furnace temperature requirements for objects to be heat-treated. Loads parts into containers, closes furnace door, and inserts parts into furnace when specified temperature is reached. Reduces heat and allows parts to cool in furnace. Activates and tends electric furnace that anneals base sections of hardened parts for subsequent machining. Positions part in fixture, presses buttons to light burners and tends flame hardening machine, according to procedures, to case-harden metal part.

51-4191.03 Heaters, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Ignites furnace with torch, and turns valve to regulate flow of fuel and air to burners. Positions plastic sheet and mold in plastic bag, heats material under lamps, and forces confrontation of sheet to mold by vacuum pressure. Removes material from furnace, using crane, or signal crane operator to transfer to next station. Positions stock in furnace, using tongs, chain hoist, or pry bar. Assists workers in repairing, replacing, cleaning, lubricating, or adjusting furnace equipment, using hand tools. Records time and production data. Signals coworker to charge steel into furnace. Impregnates fabric with plastic resins and cuts fabric into strips.

Pushes cart to curing oven or places part in autoclave. Removes part and cuts away plastic bag. Positions part in plastic bag and seals bag with iron.

Removes stock from furnace, using cold rod, tongs or chain hoist, and places stock on conveyor for transport to work area. Places part on cart, connects vacuum line to tube, and smooths bag around part to ensure vacuum. Adjusts controls to maintain temperature and heating time, using thermal instruments and charts, dials and gauges of furnace, and color of stock. Sets oven controls or turns air-pressure valve or autoclave. Inserts vacuum tube into bag and seals bag around tube with tape. Adjusts controls to synchronize speed of feed and take-off conveyors of furnace. Starts conveyors and opens furnace doors to load stock, or signals crane operator to uncover soaking pits and lower ingots into them.

51-4192.00 Lay-Out Workers, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Details location and sequence of cutting, drilling, bending, rolling, punching, and welding operations, using compass, protractor, dividers, and rule.

Locates centerline and verifies template position, using measuring instruments, including gauge blocks, height gauges, and dial indicators.

Marks curves, lines, holes, dimensions, and welding symbols onto workpiece, using scribes, soapstone, punches, and hand drill.

Determines reference points and computes layout dimensions and works to tolerances, as close as 0.001 inch.

Examines workpiece and verifies such requirements as dimensions and squareness, using rule, square, and straightedge.

Lifts and positions workpiece in relation to surface plate manually or with hoist, using parallel blocks and angle plates.

Plans and develops layout from blueprints and templates, applying knowledge of trigonometry, design, effects of heat, and properties of metal.

Applies pigment to layout surfaces, using paintbrush.

Inspects machined parts to verify conformance to specifications.

Fits and aligns fabricated parts for welding or assembly operations.

Adds dimensional details to blueprints or drawings by other workers and designs templates of wood, paper, or metal.

51-4193.01 Electrolytic Plating and Coating Machine Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Moves controls to permit electrodeposition of metal on object or to regulate movement of wire strand to obtain specified thickness. Adjusts voltage and amperage, based on observations. Determines size and composition of object to be plated and amount of electrical current and time required, following work

order. Suspends object, such as part or mold, from cathode rod (negative terminal) and immerses object in plating

solution. Suspends stick or piece of plating metal from anode (positive terminal) and immerses metal in plating solution.

Mixes chemical solutions, fills tanks and charges furnaces. Removes plated object from solution at periodic intervals and

observes object to ensure conformance to specifications. Plates small objects, such as nuts or bolts, using motor-driven

barrel. Immerses object in cleaning and rinsing baths to complete plating process. Examines object at end of process to

determine thickness of metal deposit or measures thickness, using instruments, such as micrometers. Measures, marks,

and masks areas excluded from plating. Grinds, polishes, or rinses object in water and dries object to maintain clean even surface.

51-4193.02 Electrolytic Plating and Coating Machine Operators and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Measures or estimates amounts of electric current needed and time required to coat objects. Adjusts dials to regulate flow of current and voltage supplied to terminals to control plating process. Positions objects to be plated in frame or suspends

them from positive or negative terminals of power supply. Removes object from plating solution after specified time or

when desired thickness of metal is deposited on them. Mixes and tests plating solution to specified formula and turns

valves to fill tank with solution. Monitors and measures thickness of electroplating on component part to verify conformance

to specifications, using micrometer. Mixes forming acid solution, treats battery plates, and removes and rinses formed

plates. Immerses objects to be coated or plated into cleaning solutions or sprays with conductive solution to prepare

object for plating. Rinses coated object in cleansing liquids and dries with cloth, centrifugal driers, or by tumbling in sawdust filled barrels. Lubricates moving parts of plating conveyor and cleans plating and cleaning solution tanks.

51-4193.03 Non-Electrolytic Plating and Coating Machine Setters and Set-Up Operators, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Measures and sets stops, rolls, brushes, and guides on automatic feeder and conveying equipment or coating machines, using micrometer, rule, and adjusts controls to set temperatures of coating substance, and adjusts speeds of machines and equipment. Attaches nozzle, positions gun, connects hoses, and threads wire to set up metal-spraying machine. Ignites gun and adjusts controls to regulate wire feed, air pressure, and flow of oxygen and fuel to operate metal-spraying machine. Installs gears and holding devices on conveyor equipment. Reads production schedule to determine setup of equipment and machines.

Mixes alodize solution in tank of machine, according to formula, and verifies solution concentration, using gauge. Positions workpieces, starts operation of machines and conveyors, and feeds workpieces into machines to be coated. Adjusts controls to synchronize equipment speed with speed of coating or spraying machine. Operates hoist to place workpieces onto machine feed carriage or spindle. Inspects coated products for defects and specified color and coverage. Operates sandblasting equipment to roughen and clean surface of workpieces. Preheats workpieces in oven.

51-4193.04 Non-Electrolytic Plating and Coating Machine Operators and Tenders, Metal and Plastic Entry – Mid – Senior level position assuming education and experience prerequisite

Observes gauges and adjusts controls of machine to regulate functions, such as speed and temperature, according to specifications. Sprays coating in specified pattern according to instructions and inspects area for defects, such as air bubbles or uneven coverage. Presses or turns controls to activate and set equipment operation according to specifications. Positions and feeds materials on plate into machine, manually or automatically, for processing. Fills machine receptacle with coating material or solution. Immerses workpieces in coating solution for specified time. Mixes coating material or solution according to formula, or uses premixed solutions. Places materials on racks and transfers to oven to dry for a specified period of time. Removes excess material or impurities from objects, using air hose or grinding machine. Cuts metal or other materials, using shears or band saw. Measures or weighs materials, using ruler, calculator, and scale. Positions containers to receive parts, and loads or unloads materials in containers, using dolly or hand truck. Cleans and maintains equipment, using water hose and scraper. Solders equipment and visually examines for completeness. Cleans workpieces, using wire brush. Maintains production records. Replaces worn parts and adjusts equipment components, using hand tools.

51-4194.00 Tool Grinders, Filers, and Sharpeners Entry – Mid – Senior level position assuming education and experience prerequisite

Sets-up, operates, and adjusts grinding or polishing machines to grind metal workpieces, such as dies, parts, and tools. Files or finishes surface of workpiece, using prescribed hand tool. Selects and mounts grinding wheels on machines, according to specifications, using hand tools and applying knowledge of abrasive and grinding procedures. Straightens workpiece and removes dents in workpiece, using straightening press and hammers. Computes number, width, and angle of cutting tool, micrometer, scales, and gauges and adjusts tool to produce specified cuts. Studies blueprint or layout of metal workpiece to visualize grinding procedure and plan sequences of operations. Measures and examines workpiece to verify that dimensions meet specifications. Cleans and lubricates machine parts. Removes finished workpiece from machine and places in boxes or racks, depending on size of workpiece. Inspects dies to detect defects, assess wear, and verify specifications, using micrometers, steel gauge pins, and loupe. Fits parts together in pre-assembly to ensure dimensions are accurate. Forms specified section of workpiece and repairs cracks in workpiece, using welding or brazing equipment. Removes and replaces machine parts, using hand tools. Duplicates workpiece contours, using tracer attachment. Places workpiece in electroplating solution or applies pigment to surfaces of workpiece to highlight ridges and grooves. Turns valves to direct flow of coolant against cutting wheel and workpiece. Examines and feels surface of workpiece to verify grinding meets specifications. Observes and listens to machine operation to determine whether adjustments are necessary to ensure workpieces meet specifications. Tends machine that grinds, files, or polishes workpiece. Dresses grinding wheel, according to specifications.

51-5011.01 Bindery Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Installs bindery machine devices, such as knives, guides, and clamps to accommodate sheets, signatures or books of specified sizes. Starts machines and makes trial runs to verify accuracy of machine setup. Fills glue pot and adjusts flow of glue and speed of conveyors.

Observes and monitors machine operations to detect malfunctions and makes required adjustments. Manually stocks supplies such as signatures, books, or paper. Records time spent on specific tasks and number of items produced, for

daily production sheet. Trains workers to set up, operate, and use automatic bindery machines. Removes books or products from machine and stacks them. Cleans and lubricates machinery parts and makes minor repairs. Examines product samples for defects. Reads work order to determine work instructions. Threads wire into machine to load stitcher head for stapling. Positions and clamps stitching heads on crossarms to space stitches to specified lengths. Sets machine controls to adjust length and thickness of folds, stitches or cuts, and to adjust speed and pressure. Mounts and secures rolls or reels of wire, cloth, paper or other material onto machine spindles and fills paper feed.

51-5011.02 Bindery Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Operates or tends machines that perform binding operations, such as pressing, folding, and trimming on books and related articles. Moves controls to adjust and activate bindery machine to meet specifications. Feeds books and related articles, such as periodicals and pamphlets, into binding machines, following specifications. Stitches or fastens endpapers or bindings, stitches signatures, and applies glue along binding edge of first and last signatures of books. Threads spirals in perforated holes of items to be bound, using spindle or rollers. Opens machine and removes and replaces damaged covers and book, using hand tools. Cleans work area and maintains equipment and workstations, using hand tools. Maintains records of daily production, using specified forms. Wraps product in plastic, using machine, and packs products in boxes. Rolls, bends, smooths, and folds sheets, using hands, and stacks sheets to be returned to binding machines. Removes printed material or finished products from machines or conveyor belts, and stacks material on pallets or skids. Applies materials on books or related articles, using machine. Creases or compresses signatures before affixing covers, and places paper jackets on finished books. Examines printed material and related products for defects and to ensure conformance to specifications. Punches holes in paper sheets and fastens sheets, signatures, or other material, using hand or machine punch or stapler. Removes broken wire pieces from machine and loads machine with spool of wire. Inserts illustrated pages, extra sheets, and collated sets into catalogs, periodicals, directories, and other printed products, and applies labels to envelopes, using hands or machine. Selects, loads, and adjusts workpieces and machine parts, using hand tools.

51-5021.00 Job Printers Entry – Mid – Senior level position assuming education and experience prerequisite

Selects type from type case and inserts type in printer's stick to reproduce material in copy. Lays form on proof press, inks type, fastens paper to press roller, and pulls roller over form to make proof copy. Pushes button to start press, examines printed sheets, and adjusts press when printing is defective. Corrects errors by resetting type and improves impression by tapping face of type with hammer. Cleans ink rollers at end of run. Sets feed guides according to size and thickness of paper. Fills ink fountain and moves lever to adjust flow of ink. Positions form (type in locked chase) on bed of press and tightens clamps, using wrench. Removes assembled type from galley and places type on composing stone. Places chase over type, inserts quoins, and locks chase to hold type. Slides type from stick into galley. Inserts spacers between words and leads between lines. Reads proof for errors and clarity of impression. Runs proof sheet through press and examines sheet for clarity of impression.

51-6011.03 Laundry and Dry Cleaning Machine Operators and Tenders, Except Pressing Entry – Mid – Senior level position assuming education and experience prerequisite

Starts washer, dry cleaner, drier, or extractor, and turns valves or levers to regulate and monitor cleaning or drying operations. Tends variety of automatic machines that comb and polish furs; clean, sterilize, and fluff feathers and blankets; and roll and package towels. Removes or directs other workers to remove items from washer or dry cleaning machine and into extractor or tumbler. Adjusts switches to tend and regulate equipment that fumigates and removes foreign matter from furs. Mends and sews articles, using hand stitching, adhesive patch, or power sewing machine. Hangs curtains, drapes, blankets, pants, and other garments on stretch frames to dry, and transports items between specified locations. Irons or presses articles, fabrics, and furs, using hand iron or pressing machine. Receives and marks articles for laundry or dry cleaning with identifying code number or name, using hand or machine marker. Sorts and counts articles removed from dryer and folds, wraps, or hangs items for airing out, pickup, or delivery. Examines and sorts articles to be cleaned into lots, according to color, fabric, dirt content, and cleaning technique required. Pre-soaks, sterilizes, scrubs, spot-cleans, and dries contaminated or stained articles, using neutralizer solutions and portable machines. Washes, dry-cleans, or glazes delicate articles or fur garment linings by hand, using mild detergent or dry cleaning solutions. Cleans machine filters and lubricates equipment. Starts pumps to operate distilling system that drains and reclaims dry cleaning solvents. Loads or directs other workers to load articles into washer or dry cleaning machine. Mixes and adds detergents, dyes, bleach, starch, and other solutions and chemicals to clean, color, dry, or stiffen articles.

51-6021.02 Pressing Machine Operators and Tenders – Textile, Garment, and Related Materials Entry – Mid – Senior level position assuming education and experience prerequisite

Activates pressing machine to remove wrinkles from garments and flatwork items, or shape, form, or patch articles. Selects, installs, and adjusts machine components, including pressing forms, rollers, and guides, according to pressing instructions, using hoist and hand tools. Removes finished pieces from pressing machine and hangs or stacks for cooling, or forwards for additional processing. Moistens materials to soften and smoothes and straightens materials with hands, to prepare for machine pressing. Presses materials, such as garments, drapes, and slipcovers, using hand iron. Cleans and maintains pressing machines, using cleaning solutions and lubricants. Hangs, folds, packages, and tags finished articles for delivery to customer. Applies cleaning solvents, and brushes materials made of suede, leather, and felt, to remove spots, and raise and smooth nap. Shrinks, stretches, or blocks articles by hand, to conform to original measurements, using forms, blocks, and steam. Sews end of new material to leader or to end of material impressing machine, using sewing machine. Examines and measures finished articles to verify conformance to standards, using measuring devices, including tape measure and micrometer. Positions materials, such as cloth garments, felt, or straw on table, die, or feeding mechanism of pressing machine. Lowers iron, ram, or pressing head of machine into position over material to be pressed. Activates and adjusts machine controls to regulate temperature and pressure of rollers, ironing shoe, or plates, according to specifications.

51-6021.03 Pressers, Hand Entry – Mid level position assuming education and experience prerequisite

Pushes and pulls iron over surface of article, according to type of fabric. Adjusts temperature of iron, according to fabric type, and uses covering cloths to prevent scorching or sheen on delicate fabrics. Fits odd-shaped pieces, which cannot be pressed flat over puff iron. Places article in position on ironing board or worktable. Sprays water over fabric to soften fibers when not using steam iron. Pins, folds, and hangs article after pressing. Measures fabric to specifications, cuts uneven edges with shears, folds material, and presses with iron to form heading. Smoothes and shapes fabric prior to pressing.

51-6031.01 Sewing Machine Operators, Garment Entry – Mid level position assuming education and experience prerequisite

Starts and operates or tends machines that automatically join, reinforce, or decorate material or fabricated articles. Replaces and rethreads needles. Positions material or article in clamps, template, or hoop frame prior to automatic operation of machine. Guides garment or garment parts under machine needle and presser foot to sew parts together. Records number of garment parts or complete garments sewn. Inspects garments and examines repair tags and markings on garment to locate defects or damage. Cuts material and threads, using scissors. Replaces sewing machine parts and performs basic maintenance, such as oiling machine. Draws markings or pins appliqué on fabric to obtain variation in design and marks stitching errors with pins or tape. Bastes edges of material to align and temporarily secure garment parts for final assembly. Selects supplies, such as fasteners and thread, according to specifications or characteristics of fabric. Removes holding devices and finished item from machine. Attaches tape, trim, or elastic to specified garments or garment parts, according to item specifications. Folds or stretches edges or length of items, while sewing, to facilitate forming specified sections. Attaches buttons or fasteners to fabric, using feeding hopper or clamp holder. Observes sewing machine operation to detect defects in stitching or machine malfunction, and notifies supervisor. Sews replacement parts or missing stitches, according to repair tickets. Turns knobs, screws, and dials to adjust settings of machine, according to garment style and observation of operation. Draws thread through guides, tensions, and needles and adjusts machine functions, according to fabric type. Positions item under needle, using marks on machine, clamp or template, edges of cloth, or markings on cloth as guides.

51-6031.02 Sewing Machine Operators, Non-Garment Entry – Mid level position assuming education and experience prerequisite

Activates and adjusts machine controls to regulate stitching speed and length, dimensions of gathers and tucks, and material or thread tension. Positions materials through feed rollers and guides, or positions and maneuvers under sewing machine presser foot and needle during operation. Examines and measures finished articles to verify conformance to standards, using ruler. Places spools of thread, cord, or other materials on spindles, inserts bobbin, and threads ends through machine guides and components. Selects supplies, such as binding, cord, or thread, according to specifications or color of material. Sews materials by hand, using needle and thread. Records amount of materials processed in production logs. Removes finished materials from sewing machine. Tapes or twists together thread or cord to repair breaks. Positions and marks patterns on materials to prepare for sewing. Replaces needles, sands rough areas of needles with sandpaper, and cleans and oils sewing machines to maintain equipment. Cuts materials, according to specifications, or cuts excess material or thread from finished product, using blade, scissors, or electric knife. Folds or fits together materials, such as cloth, foam rubber, or leather, to prepare for machine sewing. Mounts attachments, such as needles, cutting blades, or pattern plates, and adjusts machine guides according to specifications. Monitors machine operation to detect problems, such as defective stitching, breaks in thread, or machine malfunction. Activates sewing machine to join, gather, hem, reinforce, or decorate materials or fabricated articles, such as linens, toys, or luggage.

51-6092.00 Fabric and Apparel Patternmakers Entry – Mid – Senior level position assuming education and experience prerequisite

Draws outline of pattern parts, using drafting instruments such as calipers, squares, and straight and curved rules. Positions and cuts out pattern, using scissors and knife. Traces outline of paper onto cardboard pattern, and cuts pattern into parts to make template. Traces outline of specified pattern onto material and cuts fabric, using scissors. Marks finished pattern with garment size, section, and style information. Positions and pins pattern sections onto model form and discusses style lines, details, and revisions with designer. Lays out large patterns on floor and cuts material, according to markings. Makes drawings of garments and patterns, and writes instructions for use in reproducing commercial patterns. Computes dimensions of pattern according to size, considering stretching of material, and measures and marks pattern. Positions master pattern in clamp of grading device, places paperboard under pattern, sets device to specified size, and marks reference points. Positions master pattern on paperboard and drafts reference points based on data from charts. Calculates dimensions and specifications from sales order and enters data on worksheet. Examines sketches or sample articles and design specifications to ascertain number, shape, and size of pattern parts. Draws lines between reference points, producing outline of graded pattern. Draws details on outlined parts to indicate guides in joining parts. Draws patterns for range of garment sizes, grading master pattern for each size, using charts or grading device.

51-6093.00 Upholsterers Entry – Mid level position assuming education and experience prerequisite

Measures and cuts new covering material, using pattern and measuring and cutting instruments. Adjusts or replaces webbing, padding, and springs and secures them in place. Sews rips or tears in material, or creates tufting, using needle and thread. Draws cutting lines on material following pattern, templates, sketches, or blueprints, using chalk, pencil, paint, or other method. Reads order and applies knowledge and experience with materials to determine type and amount of material required to cover workpiece. Refinishes wood surfaces on upholstered or reupholstered furniture. Maintains records of time required to perform each job.

Designs upholstery cover patterns. Drills or punches holes in material. Stacks, aligns, and smoothes material on cutting table. Repairs frame of workpiece. Removes covering, webbing, padding, and defective springs from workpiece, using hand tools. Examines upholstery to locate defects. Attaches fasteners, grommets, buckles, ornamental trim, and other accessories to cover or frame, using hand tools. Attaches binding or applies solutions to edges of cut material to prevent raveling. Fits, installs, and secures material on workpiece, using hand tools, power tools, glue, cement, or staples. Operates sewing machine to seam cushions and join various sections of covering material.

51-7041.01 Sawing Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Selects knives to achieve specified diameter of cut, or installs bit and dado saw according to work ticket. Aligns and bolts knives in cutterhead and screws it on spindle, using wrenches. Adjusts angle of table by turning hand wheel, and bolts or clamps holding jigs to table. Places stock in jig and pushes table containing stock into saw or lays stock on conveyor that carries it into machine. Pulls table back against stops and depresses pedal to advance cutterhead that shapes end of stock.

51-7041.02 Sawing Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Operates and tends saws and machines to cut stock and to adjust machine speed and tension, moving levers and hand wheels. Guides workpiece against saw or saw over workpiece or operates automatic feeding device to guide cuts. Operates panel board of saw and conveyor system to cut stock to specified dimensions and to move stock through process. Trims defects from stock or workpiece to straighten rough edges of lumber, using circular power saw. Turns knobs, hand wheels, setscrews, and panel controls, or uses hand tools to position and adjust cutting stops and guides. Adjusts saw blades by turning hand wheels, pressing pedals, levers, and panel buttons, or using wrenches and rulers. Observes approaching lumber on conveyor to determine cut that will produce highest grade. Determines sawing blade, type and grade of stock needed, and cutting procedures, according to work order or supervisor's instructions. Mounts and bolts sawing blade or attachments to machine shaft and turns hand wheels to set blade tension. Positions and clamps stock on table, conveyor, or carriage, using hoists, guides, stops, dogs, wedges, and wrench. Moves machine table to specified angle and height by turning hand wheels, cranks, or knobs. Measures workpiece to mark for cuts and to verify accuracy of cuts, using ruler, square, or caliper rule. Clears machine jams, using hand tools. Unclamps and removes finished workpiece from table. Sharpens blades or replaces defective or worn blades and bands, using hand tools. Inspects stock for imperfections and estimates grade or quality of stock or workpiece. Lubricates and cleans machines, using wrench, grease gun, and solvents. Unloads and rolls logs from truck to sawmill deck or to carriage or moves logs in pond, using pike pole. Counts, sorts, and stacks finished workpieces and disposes of waste material.

51-7042.01 Woodworking Machine Setters and Set-up Operators, Except Sawing Entry – Mid – Senior level position assuming education and experience prerequisite

Installs knives, sanding apparatus, cams, cutting heads, bits, chisels, and blades using hand tools. Attaches and adjusts guides, stops, clamps, chucks, and feed mechanisms, using hand tools. Starts machine and feeds stock into machine through feed mechanisms or conveyors. Monitors operation of automatic machines and make adjustments as needed to correct problems and ensure conformance to specifications. Examines blueprints, drawings, and work orders, to determine characteristics of finished item, materials to be used, and machine setup requirements. Adjusts machine table or cutting devices to produce specified cut or operation. Pushes or holds workpiece against, under, or through cutting, boring or shaping mechanism. Selects knives, sanding apparatus, cams cutting heads, bits, chisels and blades. Mounts or clamps stock onto machine. Removes and replaces worn machine parts, knives, bits, belts, and sandpaper. Examines workpiece visually by touch, or using tape rule, calipers, or gauges to ensure product meets desired standards. Unclamps and removes workpiece from machine, and stacks workpiece on pallet or in box. Sharpens knives, bits, and other cutting and shaping tools. Cleans product, machine, or work area, using rags and air hose.

51-7042.02 Woodworking Machine Operators and Tenders, Except Sawing Entry – Mid – Senior level position assuming education and experience prerequisite

Starts machine, adjusts controls, and moves lever or depresses pedal to bore, shape, smooth, shave, chip, slice or cut woodstock. Starts machine and moves lever to engage hydraulic lift to press woodstock into desired form, allows for drying-time, and removes. Re-adjusts and re-aligns guides of sanding, cutting, or boring machines to correct defects in finished product, using hand tools. Installs and adjusts blades, cutterheads, boring-bits, or sanding-belts in machines, according to workpiece, machine function, and specifications, using hand tools. Selects knives, blades, cutterheads, boring-bits, or sanding-belts, according to workpiece, machine function, and specifications. Places or secures woodstock against guide or into holding-device prior to feeding into machine. Examines blueprints, drawings, or samples to determine size, type, and setting of machine tools, stops, jigs, and guides to use. Places water-soaked woodstock into form under hydraulic lift to shape for use in making such items as musical instruments. Examines finished workpiece for smoothness, shape, angle, depth-of-cut and conformity to specifications, visually and using hands, rule, or other gauges. Examines raw woodstock for defects and to ensure conformity to size and other specification standards. Examines rollers, sanding-belts, knives, cutting or boring devices, and conveyor mechanisms and sharpens or replaces worn parts, using hand tools. Cleans machines, workstation, or conveyor, using air hose, wax, solvents, brushes and rags. Marks or otherwise identifies completed and inspected workpiece. Hand-stacks on pallet or conveyor or controls hoist to remove part or product from workstation.

51-9011.02 Chemical Equipment Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts pumps and agitators, turns valves, or moves controls of processing equipment to admit, transfer, filter, or mix chemicals. Loads specified amounts of chemicals into processing equipment. Weighs, measures, or mixes prescribed quantities of materials. Draws sample of products for analysis to aid in process adjustments and maintain production standards. Drains equipment and pumps water or other solution through to flush and clean tanks or equipment. Inventories supplies received and consumed. Assists other workers in preparing and maintaining equipment. Observes safety precautions to prevent fires and explosions. Notifies maintenance engineer of equipment malfunction. Records data in log from instruments and gauges concerning temperature, pressure, materials used, treating time, and shift production. Tests samples to determine specific gravity, composition, or acidity, using chemical test equipment such as hydrometer or pH meter. Replaces filtering media or makes minor repairs to equipment, using hand tools. Patrols work area to detect leaks and equipment malfunctions, and monitor operating conditions. Observes gauges, meters, and panel lights to monitor operating conditions, such as temperature or pressure. Adjusts valves or controls to maintain system within specified operating conditions.

51-9012.00 Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts agitators, shakers, conveyors, pumps, or centrifuge machines, turns valves, or moves controls to admit, drain, filter, mix, or transfer materials. Dumps, pours, or loads specified amounts of refined or unrefined materials into equipment or containers for further processing or storage. Sets or adjusts machine controls to regulate conditions, such as material flow, temperature, and pressure, according to specified operating procedures. Monitors material flow and control instruments, such as gauges, indicators, and meters to ensure optimal processing conditions and results. Removes clogs, defects, and impurities from machines, tanks, conveyors, screen, or other processing equipment. Examines samples visually or by hand to verify quality, such as clarity, cleanliness, consistency, dryness, and texture. Measures or weighs materials to be refined, mixed, transferred, stored, or otherwise processed. Communicates or signals processing

instructions to other workers. Maintains log of instrument readings, test results, and shift production. Removes full bags or containers from discharge outlets and replaces them with empty ones. Tests samples to determine viscosity, acidity, specific gravity, or degree of concentration, using test equipment, such as viscometer, pH meter, and hydrometer. Collects samples of material or product for laboratory analysis. Cleans tanks, screens, inflow pipes, and other processing equipment, using hoses, brushes, scrapers, or chemical solutions. Lubricates, connects, installs, replaces, or makes minor adjustments or repairs to hoses, pumps, filters, or screens to maintain processing equipment, using hand tools. Inspects machines and equipment for hazards, operating efficiency, mechanical malfunctions, wear, and leaks.

51-9021.00 Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Operates or tends machines and equipment that crush, grind, polish, or blend materials. Moves controls to start, stop, or adjust machinery and equipment that crush, grind, polish, or blend materials. Adds or mixes chemicals and ingredients for processing, using hand tools or other devices. Dislodges and clears jammed materials, or other items, from machinery and equipment, using hand tools. Loads materials into machinery and equipment, using hand tools. Observes production monitoring equipment to ensure safety and efficient operation. Tends accessory equipment, such as pumps and conveyors, to move materials or ingredients through production process. Reads work orders to ascertain production specifications and information. Weighs or measures materials, ingredients, and products to ensure conformance to requirements. Records operational and production data on specified forms. Transfers materials, supplies, and products between work areas, using moving equipment and hand tools. Tests samples of materials or products to ensure compliance with specifications, using test equipment. Cleans and maintains machinery, equipment, materials, and products, using hand tools. Collects samples of materials or products for laboratory testing. Examines or feels materials, ingredients, or products to ensure conformance to established standards.

51-9023.00 Mixing and Blending Machine Setters, Operators, and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Operates or tends machines and equipment that crush, grind, polish, or blend materials. Records operational and production data on specified forms. Transfers materials, supplies, and products between work areas, using moving equipment and hand tools. Tests samples of materials or products to ensure compliance with specifications, using test equipment. Cleans and maintains machinery, equipment, materials, and products, using hand tools. Collects samples of materials or products for laboratory testing. Examines or feels materials, ingredients, or products to ensure conformance to established standards. Reads work orders to ascertain production specifications and information. Loads materials into machinery and equipment, using hand tools. Adds or mixes chemicals and ingredients for processing, using hand tools or other devices. Dislodges and clears jammed materials, or other items, from machinery and equipment, using hand tools. Weighs or measures materials, ingredients, and products to ensure conformance to requirements. Tends accessory equipment, such as pumps and conveyors, to move materials or ingredients through production process. Observes production monitoring equipment to ensure safety and efficient operation. Moves controls to start, stop, or adjust machinery and equipment that crush, grind, polish, or blend materials.

51-9031.00 Cutters and Trimmers, Hand Entry – Mid – Senior level position assuming education and experience prerequisite

Cuts materials, such as textiles, food, and metal, using hand tools, portable power tools, or bench-mounted tools. Adjusts guides and stops to control depth and width of cuts. Lowers table-mounted cutter, such as knife blade, cutting wheel, or saw to cut items to specified size. Replaces or sharpens dulled cutting tools, such as saws. Marks identification numbers, trademark, grade, marketing data, size, or model number on products. Observes and marks or discards items with defects, such as spot, stains, scars, snags, chips, scratches, or unacceptable shape or finish. Folds or shapes materials, preparatory to or after cutting. Unrolls, lays out, attaches, or mounts material or item on cutting table or machine. Reads work order to determine dimensions, cutting locations, and quantity to cut. Marks cutting lines around pattern or template, or follows layout points, using square, rule, straightedge and chalk, pencil, or scribe. Positions template or measures material to locate specified point of cut or to obtain maximum yield, using rule, scale, or pattern. Transports items to work or storage area by pushing or pulling carts. Counts or weighs and bundles items. Cleans, treats, buffs, or polishes finished items, using grinder, brush, chisel, and cleaning solutions and polishing materials. Stacks cut items and loads them on racks, conveyors, or onto truck. Separates materials or products according to size, weight, type, condition, color, or shade. Routes items to provide cutouts for parts, using portable router, grinder, and hand tools.

51-9032.01 Fiber Product Cutting Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite



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Adjusts machine controls to position and align, and to regulate speed and pressure of components. Activates machine to cut, slice, slit, perforate, or score fiber products, such as paperboard sheets, rubber shoe soles, or plaster wallboard. Monitors operation of cutting or slicing machine to detect malfunctions, removes defective or substandard materials, and readjusts machine components to conform to standards. Positions materials, such as rubber, paper, or leather on feeding mechanism of cutting or slicing machine. Replaces worn or broken parts, and cleans and lubricates cutting or slicing machine to maintain equipment in working order. Maintains production records, such as quantity, type, and dimensions of materials produced. Removes completed materials or products from cutting or slicing machine and stacks or stores for additional processing. Examines, measures, and weighs materials or products to verify conformance to specifications, using measuring devices, such as ruler, micrometer, or scale. Reviews work order, blueprints, specifications, or job sample to determine components, settings, and adjustments for cutting and slicing machines. Selects and installs machine components, such as cutting blades, rollers, and templates, according to specifications, using hand tools.

51-9032.02 Stone Sawyers Entry – Mid – Senior level position assuming education and experience prerequisite

Starts saw and moves blade across surface of material, such as stone, concrete slabs, and asbestos-cement sheets and pipes, to saw. Starts pump to circulate water and abrasive onto blade or cable during cutting. Turns crank or presses button to move car under sawing cable or saw frame.

Observes operation to detect uneven sawing and exhausted abrasive supply and tightens pulleys or adds abrasive to maintain cutting speed. Builds bed of timbers on car, and aligns and levels stone on bed, using crowbar, sledgehammer, wedges, blocks, rule, and spirit level. Marks dimensions or traces on stone according to diagram, using chisel and hammer, straightedge, rule, and chalked string. Operates crane or signals crane operator to position or remove stone from car or saw bed. Washes stone, using water hose, and verifies width or thickness of cut stone, using rule.

Aligns cable or blades with marks on stone, and presses button or turns lever to lower sawing cable or blades to stone. Changes or replaces saw blades, cables, and grinding wheels, using wrench. Adjusts blade pressure against stone, using ammeter, and lowers blade in stone as cut depth increases.

51-9032.03 Glass Cutting Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Operates single cut machine to cut glass. Removes and replaces worn cutter heads, using hand tools. Measures glass with tape to verify dimensions and observes glass to detect defects.

Starts vacuum-cupped crane, to lift and transfer glass. Directs workers on cutting team. Reviews work order and maintains record of production, using counter.

Adjusts timing mechanism, to synchronize breaker bar to snap glass at score. Starts machine to verify setup. Adjusts position, height, and stroke of cutting bridges, manually or by turning controls, to score glass to specific dimensions.

51-9032.04 Cutting and Slicing Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts cutting machine by pressing button, pulling lever, or depressing pedal to cut stock, following markings or specifications. Reads work order, or receives oral instructions, regarding specifications, for stock to be cut.

Positions stock along cutting lines, or against stops, on bed of scoring or cutting machine. Feeds stock into cutting machine, conveyor, or under cutting blades, by threading, guiding, pushing, or turning hand wheel. Stacks and sorts cut material according to type and size, for packaging, further processing, or shipping. Moves stock or scrap to and from machine transporting either manually or using cart, hand truck, or lift truck. Records data concerning amount and type of stock cut from duties performed, including weight, length, and width. Cleans and lubricates cutting machine, conveyors, blades, saws, or knives, using steam hose, scrapers, brush, or oil cans. Cuts stock manually, to prepare for machine cutting, using tools such as knife, cleaver, handsaw, or hammer and chisel. Sharpens cutting blades, knives, or saws, using file, bench grinder, or honing stone. Examines and measures stock to ensure conformance to specifications, using ruler, gauge, micrometer or scale, and removes defects. Installs or replaces cutting knives, blades, or wheels, in cutting machine, using hand tools. Marks cutting lines, or identifying information on stock, using marking pencil, ruler, or scribe. Observes cutting machine in operation, to ensure even flow of stock and to detect jamming, improper feeding, or foreign materials. Stops cutting machine when necessary, by pulling lever, pressing button, or depressing pedal, and removes debris. Adjusts feeding guides, blades, settings, or speed, to regulate specified depth, length, or width of material, using hand tools or hands.

51-9041.01 Extruding, Forming, Pressing, and Compacting Machine Setters and Set-Up Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Installs dies or molds in machines to produce products from variety of materials, according to work order and specifications. Observes operation of machine and product to detect and diagnose cause of faulty operation and monitors gauges and recorders. Synchronizes speed of sections of machine when producing products involving several steps or

processes. Installs, aligns, and adjusts neck rings, press plungers, and feeder tubes to molds to deliver material and form product. Selects and measures arbors and dies to verify size specified on work ticket. Collects, examines, measures, weighs, and tests product to verify machine setup and conformance of product to specifications. Cleans dies, arbors, compression chambers, and molds, using swabs, sponge, or air hose and swabs molds with solution to prevent sticking. Removes products from discharge belts and molds, mold components, and feeder tubes from machines. Ignites burner to preheat product or applies heat, using torch. Feeds product into machine by hand or conveyor. Pours, scoops, or dumps specified ingredients, metal assemblies, or mixtures into sections of machine prior to starting machine. Threads extruded strip through water tank and holddown bars or attaches strands to wire and draws through tube. Adjusts timer drum to set size of product material and rollers, cutoff knives, and stops to regulate thickness and length. Disassembles and repairs machinery and equipment. Routes sample to lab for analysis, according to procedure. Records product information, such as scrap quantity, machine number, and ingredients, to complete work ticket and places tickets with product. Couples air and gas lines to machine to maintain plasticity of material and to regulate solidification of final product. Presses control button to activate machinery and equipment. Operates machines and notifies supervisor or setup personnel of needed adjustments to machines. Turns controls to control machine functions, such as regulate air pressure, create vacuum, and coolant flow.

51-9041.02 Extruding, Forming, Pressing, and Compacting Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Activates machine to shape or form products, such as candy bars, light bulbs, silver spoons, balloons, or insulation panels. Records and maintains production data, such as meter readings, and quantity, type, and dimensions of materials produced. Replaces worn or broken parts, such as nozzles, punches, and filters, and cleans and lubricates machine components to maintain in working order. Moves materials, supplies, components, and finished products between storage and work areas, using work aids, such as racks, hoists, and hand trucks. Examines, measures, and weighs materials or products to verify conformance to standards, using measuring devices, such as templates, micrometers, or scales. Selects and installs machine components, such as dies, molds, and cutters, according to specifications, using hand tools and measuring devices. Measures, mixes, cuts, shapes, softens, and joins materials and ingredients, such as powder, cornmeal, or rubber to prepare for machine processing. Reviews work orders, specifications, or instructions to determine materials, ingredients, procedures, components, settings, and adjustments for extruding, form Removes materials or products from mold, or from extruding, forming, pressing, or compacting machine, and stacks or stores for additional processing. Adjusts machine components to regulate speed, pressure, and temperature of machine, and amount, dimensions, and flow of materials or ingredients. Fills molds or positions ingredients or materials, such as glass rods, candy, or rolls of paper, on machine feeding mechanism. Monitors machine operations and observes indicator lights and gauges, such as thermometers, voltage meters, and timers to detect malfunctions. Clears jams, removes defective or substandard materials or products, and readjusts machine components to conform to specifications.

51-9051.00 Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Loads equipment receptacle or conveyor with material to be processed, manually or using hoist. Weighs or measures specified amount of material or substance to be processed, using devices such as scales and calipers. Reads and interprets work orders and instructions to determine work assignment, process specifications, and production schedule. Transports materials and products to and from work area, manually or using cart, hand truck, or hoist. Confers with supervisor or other equipment operators to report equipment malfunction or resolve problems resulting from process changes. Records gauge readings, test results, and shift production in logbook. Cleans, lubricates, and adjusts equipment, using items such as scrapers, solvents, air hose, oil, and hand tools. Replaces worn or defective equipment parts, using hand tools. Examines or tests sample of processed substance, or collects sample for laboratory testing, to ensure conformance to specifications. Stops equipment and clears blockages or jams, using fingers, wire, or hand tools. Presses and adjusts controls to activate, set, and regulate equipment operation according to specifications. Monitors equipment operation, gauges, and panel lights to detect deviation from standards.

51-9061.01 Materials Inspectors Mid – Senior level position assuming education and experience prerequisite

Inspects materials, products, and work in progress for conformance to specifications, and adjusts process or assembly equipment to meet standards. Analyzes and interprets blueprints, sample data, and other materials to determine, change, or measure specifications or inspection and testing procedures. Reads dials and meters to verify functioning of equipment according to specifications. Fabricates, installs, positions, or connects components, parts, finished products, or instruments for testing or operational purposes. Observes and monitors production operations and equipment to ensure proper assembly of parts, or assists in testing and monitoring activities. Confers with vendors and others regarding

inspection results, recommends corrective procedures, and compiles reports of results, recommendations, and needed repairs. Supervises testing or drilling activities, and adjusts equipment to obtain sample fluids or to direct drilling. Operates or tends machinery and equipment, and uses hand tools. Marks items for acceptance or rejection, records test results and inspection data, and compares findings with specifications to ensure conformance to standards. Collects samples for testing, and computes findings. Tests and measures finished products, components, or assemblies for functioning, operation, accuracy, or assembly to verify adherence to functional specifications.

51-9061.02 Mechanical Inspectors Mid – Senior level position assuming education and experience prerequisite

Tests and measures finished products, components, or assemblies for functioning, operation, accuracy, or assembly to verify adherence to functional specifications. Collects samples for testing, and computes findings. Reads dials and meters to ensure that equipment is operating according to specifications.

Cleans and maintains test equipment and instruments to ensure proper functioning. Confers with vendors and others regarding inspection results, recommends corrective procedures, and compiles reports of results, recommendations, and needed repairs. Completes necessary procedures to satisfy licensing requirements, and indicates concurrence with acceptance or rejection decisions. Estimates and records operational data. Installs and positions new or replacement parts, components, and instruments. Analyzes and interprets sample data. Reads and interprets materials, such as work orders, inspection manuals, and blueprints, to determine inspection and test procedures. Discards or rejects products, materials, and equipment not meeting specifications. Marks items for acceptance or rejection, records test results and inspection data, and compares findings with specifications to ensure conformance to standards. Inspects materials, products, and work in progress for conformance to specifications, and adjusts process or assembly equipment to meet standards. Starts and operates finished products for testing or inspection.

51-9061.03 Precision Devices Inspectors and Testers Mid – Senior level position assuming education and experience prerequisite

Inspects materials, products, and work in progress for conformance to specifications, and adjusts process or assembly equipment to meet standards. Reads dials and meters to verify functioning of equipment according to specifications.

Cleans and maintains test equipment and instruments and certifies that precision instruments meet standards.

Fabricates, installs, positions, or connects components, parts, finished products, or instruments for testing or operational purposes. Discards or rejects products, materials, and equipment not meeting specifications. Analyzes and interprets blueprints, sample data, and other materials to determine, change, or measure specifications or inspection and testing procedures. Completes necessary procedures to satisfy licensing requirements. Computes and/or calculates data and other information.

Confers with vendors and others regarding inspection results and recommends corrective procedures. Disassembles defective parts and components. Estimates operational data to meet acceptable standards. Operates or tends machinery and equipment, and uses hand tools. Marks items for acceptance or rejection, records test results and inspection data, and compares findings with specifications to ensure conformance to standards. Tests and measures finished products, components, or assemblies for functioning, operation, accuracy, or assembly to verify adherence to functional specifications.

51-9061.04 Electrical and Electronic Inspectors and Testers Mid – Senior level position assuming education and experience prerequisite

Tests and measures finished products, components, or assemblies for functioning, operation, accuracy, or assembly to verify adherence to functional specifications. Marks items for acceptance or rejection, records test results and inspection data, and compares findings with specifications to ensure conformance to standards. Reads dials and meters to verify functioning of equipment according to specifications. Inspects materials, products, and work in progress for conformance to specifications, and adjusts process or assembly equipment to meet standards. Analyzes and interprets blueprints, sample data, and other materials to determine, change, or measure specifications or inspection and testing procedures.

Examines, and adjusts or repairs, finished products, and components or parts. Operates or tends machinery and equipment, and uses hand tools. Cleans and maintains test equipment and instruments to ensure proper functioning.

Positions or directs other workers to position products, components, or parts, for testing. Writes and installs computer programs to control test equipment. Installs, positions, or connects new or replacement parts, components, and instruments. Reviews maintenance records to ensure that plant equipment functions properly. Disassembles defective parts and components. Confers with vendors and others regarding inspection results, recommends corrective procedures, and compiles reports of results, recommendations, and needed repairs. Computes and/or calculates sample data and test results.

51-9061.05 Production Inspectors, Testers, Graders, Sorters, Samplers, Weighers Mid – Senior level position assuming education and experience prerequisite

Weighs materials, products, containers, or samples to verify packaging weight, to determine percentage of each ingredient, or to determine sorting. Examines product or monitors processing of product, using any or all of five senses, to determine defects or grade. Measures dimensions of product, using measuring instruments, such as rulers, calipers, gauges, or micrometers, to verify conformance to specifications. Tests samples, materials, or products, using test equipment, such as thermometer, voltmeter, moisture meter, or tensiometer, for conformance to specifications. Marks, affixes, or stamps product or container to identify defects, or denote grade or size information. Collects or selects samples for testing or for use as model. Notifies supervisor or specified personnel of deviations from specifications, machine malfunctions, or need for equipment maintenance. Uses or operates product to test functional performance. Sets controls, starts machine, and observes machine, which automatically sorts or inspects products. Computes percentages or averages, using formulas and calculator, and prepares reports of inspection or test findings. Wraps and packages product for shipment or delivery. Transports inspected or tested products to other workstations, using hand truck or lift truck. Cleans, trims, makes adjustments, or repairs product or processing equipment to correct defects found during inspection. Counts number of product tested or inspected, and stacks or arranges for further processing, shipping, or packing. Reads work order to determine inspection criteria and to verify identification numbers and product type. Discards or routes defective products or contaminants for rework or reuse. Records inspection or test data, such as weight, temperature, grade, or moisture content, and number inspected or graded. Grades, classifies, and sorts products according to size, weight, color, or other specifications. Compares color, shape, texture, or grade of product or material with color chart, template, or sample, to verify conformance to standards.

51-9071.01 Jewelers Entry – Mid – Senior level position assuming education and experience prerequisite

Cuts and shapes metal into jewelry pieces, using cutting and carving tools. Arranges jewelry pieces into specified design, softens metal by heating with gas torch, and shapes, using hammer and die. Solders pieces of jewelry together and enlarges or reduces size of rings, using soldering torch or iron. Repairs, reshapes, and restyles jewelry by replacing broken parts or using hand tools and machines. Ties or twists gold or silver wires together, and bends to form rings. Smooths soldered joints and rough spots, using hand file and emery paper, and polishes with polishing wheel or buffing wire. Immerses jewelry in cleaning solution or acid to remove stains, or in solution of gold or other metal to color jewelry. Forms model of article from wax or metal, using carving tools. Places model in casting ring, and pours plaster into ring to form mold. Forms sand or rubber mold from model for casting article. Pours molten metal into mold, or operates centrifugal casting machine, to cast article. Examines gemstone surfaces and internal structure to evaluate genuineness, quality, and value, using polariscope, refractometer, and other optical instruments. Immerses gemstones in chemical solutions to determine specific gravity and key properties for identification and appraisal. Grades stones for color, perfection, and quality of cut. Estimates wholesale and retail value of gemstones, following price guides and market fluctuations.

51-9071.02 Silversmiths Entry – Mid – Senior level position assuming education and experience prerequisite

Anneals silverware, such as coffeepots, tea sets, and trays, in gas oven for prescribed time to soften metal for reworking. Solders parts together, and fills holes and cracks with silver solder, using gas torch. Hammers out deformations, selecting and using hammer and dollies with head corresponding in curvature with surface of article. Forms concavity in bottom of article to improve stability, using tracing punches and hammer. Shapes and straightens damaged or twisted articles by hand, or using pliers. Strikes article with small tools, or punches with hammer, to indent or restore embossing. Glues plastic separators to handles of coffee and teapots. Outlines design from photographs or drawings onto surface of article, using hand tools. Positions article over snarling tool and raises design area, using foot-powered hammer. Peens edges of scratches or holes to repair defect, using peening hammer. Wires parts, such as legs, spouts, and handles to body to prepare article for soldering. Pierces and cuts open design in ornamentation, using hand drill and scroll saw. Examines article to determine nature of defects, such as dents, uneven bottom, scratches, or holes, to repair. Verifies levelness of bottom edges of article, using straightedge, or by rocking back and forth on flat surface.

51-9071.03 Model and Mold Makers, Jewelry Entry – Mid – Senior level position assuming education and experience prerequisite

Carves, chisels, scrapes, and files plaster, wax or other plastic materials to make mold or model, according to design specifications. Fits, secures, and solders halves of molds together and drills holes in mold to attach handles and allow gases to escape during casting. Lays out design on metal stock and cuts along markings to fabricate pieces used to cast metal molds. Builds sand mold in flask, following pattern, and heats flask using furnace or torch to dry and harden mold. Cuts design in mold or other material to be used as model to fabricate metal and jewelry products. Constructs preliminary model of wax, metal, clay or plaster, forms sample casting in mold, and measures casting to verify dimensions. Mixes or melts clay, metal, plaster, wax or other material and pours material into mold to cast model or mold. Examines and



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measures metal parts for conformance to design specifications on scale drawing. Writes or modifies design specifications, such as content, weight, and material to be used to cast article. Presses model into clay and builds up clay around exposed parts of model to retain plaster. Removes mold from cast article, cleans mold, and applies shellac and dry powder to preserve mold for reuse. Polishes metal surfaces and products, using abrasive wheel. Modifies, sharpens, repairs or fabricates jigs, fixtures, and hand tools, such as scrapers, cutter, gougers, and shapers. Computes cost of labor and material to determine production cost of products and articles.

51-9071.04 Bench Workers, Jewelry Entry – Mid – Senior level position assuming education and experience prerequisite

Cuts, trims, shapes and smoothes jewelry stones, pearls, and metal pieces, using abrasives, grinding stone and power and hand tools. Weighs, mixes and melts metal alloys or material and pours molten material into mold to cast models of jewelry. Forms, joins, or assembles metal pieces, articles, or wire, using soldering iron, gas torch, and hand tools. Disassembles mold casting from metal or jewelry workpiece and places work piece in water or on tray to cool. Marks and drills holes in jewelry mounting to center stones according to design specifications. Positions and aligns stones and metal pieces and sets, mounts and secures item in place, using setting and hand tools. Manually rotates mold to distribute molten material and prevent formation of air pockets in mold. Marks, engraves or embosses designs on metal pieces, such as castings, wire, or jewelry, following samples, sketches, or other specifications. Plates articles, such as jewelry pieces and clock and watch dials with silver, gold, nickel, or other metals. Examines assembled or finished product, using magnifying glass or precision measuring instruments, to ensure conformance to specifications. Repairs existing jewelry mountings to reposition jewels or adjust mounting. Sands inside mold pieces, using emery cloth and chalk dust. Assembles and secures mold sections used to cast metal articles and pieces. Brushes, buffs, cleans and polishes metal items and jewelry pieces, using jeweler's tools, polishing wheel, and chemical bath. Operates machines, such as centrifugal-casting, routing, and lathe, to fabricate casting molds, metal parts or wax models of products. Weighs completed pieces to determine deviation from specifications and records weight and processing time. Designs and fabricates molds, models and machine accessories, and modifies hand tools used to cast metal and jewelry pieces. Researches and analyzes reference materials and consults with interested parties to develop new or modify existing products.

51-9071.05 Pewter Casters and Finishers Entry – Mid – Senior level position assuming education and experience prerequisite

Fills casting mold to form parts. Secures molded item in chuck of lathe, activates lathe, and finishes inner and outer surfaces of item. Rotates mold to distribute alloy in mold and to prevent formation of air pockets. Heats ingots or alloy mixture and skims off impurities. Weighs and mixes alloy ingredients. Engraves decorative lines on item, using engraving tool. Routes out location of part and solder path where part is joined to item, using routing machine. Positions and aligns auxiliary part in jig and joins parts, using solder and blowtorch. Sands inside of mold parts, applies glaze to inside surface of mold, and assembles mold. Strikes mold to separate dried casting from mold. Determines placement of auxiliary parts, such as handle and spout and marks locations of parts. Weighs completed item to determine deviation from specified weight and records weight. Designs, drafts, and fabricates models of new casting molds and chipping and turning tools used to finish surface of products. Carries castings or finished item to storage area or next workstation. Researches reference materials, analyzes production data, and consults with interested parties to develop ideas for new products.

51-9071.06 Gem and Diamond Workers Entry – Mid – Senior level position assuming education and experience prerequisite

Holds stone, gem, die, or stylus, attached to holder or lapidary stick, against rotating plates or wheels to shape, grind, and polish. Grinds, drills, and finishes jewel bearings for use in precision instruments, such as compasses and chronometers. Bores, laps, and polishes holes in industrial diamonds used for dies, using drill, lathe, lapping machine, and hand tools. Splits gem along pre-marked lines to remove imperfections, using blade and jeweler's hammer. Laps girdle on rough diamonds, using diamond-girdling lathe. Measures size of stone's bore holes and cuts to ensure adherence to specifications, using precision measuring instruments. Locates and marks drilling position on surface of diamond dies, using diamond chip and power hand drill. Lubricates, dismantles, and cleans lapping, boring, cutting, polishing, and shaping equipment and machinery. Replaces, trues, and sharpen blades, drills, and plates. Examines gem during processing to ensure accuracy of angle and position of cut or bore, using magnifying glass, loupe, or shadowgraph. Secures gem or diamond in holder, chuck, dop, lapidary stick, or block for cutting, polishing, grinding, drilling, or shaping. Examines diamond or gem to determine shape, cut, and width of stone. Selects shaping wheel, mixes, and applies abrasive, bort, or polishing compound. Positions gem or diamond against edge of revolving saw, lathe saw, or lapidary slitter to cut, block, or slit stone.

51-9081.00 Dental Laboratory Technicians Entry – Mid level position assuming education and experience prerequisite

Fabricates dental appliances or apparatus, such as dentures, retainers, or metal bands. Reads prescription or specifications and examines models and impressions to determine design of dental products to be constructed. Rebuilds or replaces linings, wire sections, and missing teeth to repair dentures. Casts plastic, plaster, and metal framework and removes mold from frame. Melts metals or mixes plaster, porcelain, or acrylic paste, and pours material into molds or over framework to form dental apparatus or prosthesis. Applies investments or mixtures, such as porcelain paste or wax, over prosthesis framework or setup, using brushes and spatula. Shapes and solders wire and metal frames or bands for dental products, using soldering iron and hand tools. Tests appliance for conformance to specifications and accuracy of occlusion, using articulator and micrometer. Assembles, carves, grinds, and polishes metal and plastic appliances, using pliers, spatula, grinders, and polishes. Fills chipped or low spots in surface with acrylic resin. Removes excess mixture and investment and polishes surface of prosthesis or framework, using polishing machine.

51-9082.00 Medical Appliance Technicians Entry – Mid level position assuming education and experience prerequisite

Carves, cuts, grinds, and welds wood, plastic, or metal material to fabricate medical supportive devices, using hand and power tools. Repairs and maintains medical supportive devices, such as artificial limbs, braces, and surgical supports, according to specifications. Lays out and marks dimensions of parts, using templates and precision measuring instruments. Bends, forms, and shapes fabric or material to conform to measurements for prescribed contours to fabricate structural components. Drills and taps holes for rivets, and glues, welds, bolts, and rivets parts together to form prosthetic or orthotic device. Polishes artificial limbs, braces, and supports, using grinding and buffing wheels. Mixes pigments according to formula to match skin coloring of patient and applies mixture to prosthetic or orthotic device. Reads specifications to determine type of product or device to be fabricated and selects required materials and tools. Constructs or receives plaster cast of patient's torso or limbs to use as pattern for cutting and fabricating supportive devices. Tests medical supportive device for body fit, alignment, movement, and biomechanical stability, using meters and alignment fixtures. Covers or pads metal or plastic structures and devices, using coverings such as rubber, leather, felt, plastic, or fiberglass. Fabricates wax or plastic impression of amputated area and prepares mold from impression to form artificial cosmetic ear, nose, or hand. Fits appliance onto patient and adjusts appliance as necessary. Instructs patient in use of prosthetic or orthotic device.

51-9111.00 Packaging and Filling Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Tends or operates machine that packages product. Starts machine, by engaging controls. Stops or resets machine when malfunction occurs and clears machine jams.

Regulates machine flow, speed, or temperature. Operates mechanism to cut filler product or packaging material. Adjusts machine tension and pressure and machine components according to size or processing angle of product. Removes finished packaged items from machine and separates rejected items. Observes machine operations to ensure quality and conformity of filled or packaged products to standards. Attaches identification labels to finished packaged items. Stacks finished packaged items or packs items in cartons or containers. Counts and secures finished packaged items by hand tying, sewing, or attaching fastener. Tests and evaluates product and verifies product weight or measurement to ensure quality standards. Stocks packaging material for machine processing. Stocks product for packaging or filling machine operation. Inspects and removes defective product and packaging material.

51-9132.00 Photographic Processing Machine Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Loads circuit boards, racks or rolls of film, negatives, or printing paper into processing or printing machines. Removes completed work from equipment and examines circuit boards, plates, film, and prints for conformance to quality standards. Places film in labeled containers or numbers film for identification, using numbering machine or by hand. Reads work orders and examines negatives and film to determine machine settings and processing requirements. Maintains records, such as number and types of processing completed, rate of materials usage, and customer charges. Cleans and maintains photo processing equipment, using cleaning and rinsing solutions and ultrasonic equipment. Discards or cleans and repairs defective film or circuit patterns on photographic plates, using cleaning solutions and hand tools. Measures and mixes chemicals according to formula to prepare solutions for processing. Sets and adjusts machine controls, according to specifications, type of operation, and material requirements. Starts and operates machines to prepare circuit boards and expose, develop, etch, fix, wash, dry, and print film or plates. Monitors equipment operation to detect malfunctions. Fills tanks of processing machines with solutions, such as developer, dyes, stop-baths, fixers, bleaches, and washes.

51-9141.00 Semiconductor Processors Entry – Mid – Senior level position assuming education and experience prerequisite

Measures and weighs amounts of crystal growing materials, mixes and grinds materials, and loads materials into container, following procedures. Forms seed crystal for crystal growing or locates crystal axis of ingot, using x-ray equipment, drill, and sanding machine. Aligns photo mask pattern on photoresist layer, exposes pattern to ultraviolet light, and develops pattern, using specialized equipment. Attaches ampoule to diffusion pump to remove air from ampoule, and seals ampoule, using blowtorch. Places semiconductor wafers in processing containers or equipment holders, using vacuum wand or tweezers. Monitors operation, and adjusts controls of processing machines and equipment, to produce compositions with specific electronic properties. Manipulates valves, switches, and buttons, or keys commands into control panels to start semiconductor processing cycles. Etches, laps, polishes, or grinds wafers or ingots, using etching, lapping, polishing, or grinding equipment. Operates saw to cut remelt into sections of specified size or to cut ingots into wafers. Cleans and dries materials and equipment using solvent, etching or sandblasting equipment, and drying equipment to remove contaminants or photoresist. Loads and unloads equipment chambers and transports finished product to storage or to area for further processing. Inspects materials, components, or products for surface defects and measures circuitry, using electronic test equipment, precision measuring instruments, and standard procedures. Counts, sorts, and weighs processed items. Stamps or etches identifying information on finished component. Maintains processing, production, and inspection information and reports.

51-9191.00 Cementing and Gluing Machine Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Adjusts machine to apply specified amount of glue, cement, or adhesive. Reads work orders and communicates with coworkers to determine machine and equipment settings and adjustments, and supply and product specifications. Monitors and fills machine with glue, cement, or adhesive as needed. Transports materials, supplies, and finished products between storage and work areas, using forklift. Maintains production records, such as number, dimensions, and thickness of materials processed. Cleans and maintains gluing and cementing machines, using cleaning solutions, lubricants, brushes, and scrapers. Removes completed materials or products and restocks materials to be joined. Examines and measures completed materials or products to verify conformance to specifications, using measuring devices, such as tape measure, gauge, or calipers. Measures and mixes ingredients according to specifications to prepare glue. Mounts or loads material, such as paper, plastic, wood, or rubber in feeding mechanism of cementing or gluing machine. Positions materials being joined to ensure accurate application of adhesive. Starts machine and turns valves or moves controls to feed, admit, or transfer materials and adhesive. Adjusts machine components according to specifications, such as width, length, and thickness of materials to be joined. Observes gauges, meters, and control panels to regulate temperature, pressure, or speed of feeder or conveyor. Monitors machine operation to detect malfunctions, remove jammed materials, and readjust machine components to conform to specifications.

51-9192.00 Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Observes machine operation, gauges, or thermometer and adjusts controls to maintain operation, according to specifications. Loads and unloads objects to and from machine, conveyor or rack. Draws sample for laboratory analysis or tests solutions for conformance to specifications, such as acidity or specific gravity. Adjusts, cleans, and lubricates mechanical parts of machine, using hand tools and grease gun. Measures, weighs, or mixes specified quantity of cleaning solutions, using measuring tank, calibrated rod or suction tube. Records gauge readings, materials used, processing time, or test results in production log. Examines and inspects machine for malfunctions, and product for conformance to processing specifications. Drains, cleans, and refills machine or tank at designated intervals with cleaning solution or water. Sets controls to regulate temperature and length of cycle and starts conveyors, pumps, agitators, and machines. Adds specified amounts of chemicals into equipment at required time to maintain level and concentration of solution.

51-9193.00 Cooling and Freezing Equipment Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts pumps, agitators, and conveyors, and turns valves to admit or transfer product, refrigerant, or mix. Measures or weighs specified amounts of ingredients or material, and adds into tanks, vats, or equipment. Places or positions containers into equipment and removes container after cooling or freezing process. Records temperatures, amount of materials processed, or test results on report form. Loads and positions wrapping paper, sticks, bags, or cartons into dispensing machines, and removes jammed sticks, using pliers or picks. Cleans, maintains, and repairs machines. Scrapes, dislodges, or breaks excess frost or ice from equipment. Flushes lines with solutions or steam to clean and sterilize equipment. Draws sample of product and tests for specific gravity, acidity, or sugar content, using hydrometer, pH meter, or refractometer. Stirs material with spoon or paddle to mix ingredients or allow even cooling and prevent coagulation. Inserts forming fixture, and starts machine that cuts frozen product into measured portions or specified



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shapes. Assembles or attaches pipes, fittings, or valves, using hand tools. Adjusts machine or freezer speed and air intake to obtain desired consistency and amount of product. Starts equipment to blend contents or mix with air to prevent sticking to vat. Monitors pressure gauges, flowmeters, thermometers, or product, and adjusts controls to maintain specified conditions. Positions molds on conveyor, and measures and adjusts level of fill, using depth gauge.

51-9195.07 Molding and Casting Workers Entry – Mid – Senior level position assuming education and experience prerequisite

Fills mold with mixed material or applies material to mold to specified thickness. Operates and adjusts controls of heating equipment to melt material or to cure, dry or bake filled molds according to specifications. Measures ingredients and mixes molding or casting material or sealing compound, to prescribed consistency according to formula. Removes excess material and levels and smoothes wet mold mixture. Reads work order or examines part to determine part or section of product to be produced. Installs and secures mold or mold parts together. Selects size and type of mold according to instructions. Engraves or stamps identifying symbols, letters or numbers on product. Cleans and lubricates mold and mold parts. Cleans, trims, smoothes, and polishes products or parts. Fastens metal inserts, such as drainage tubes, bolts, or electrical connections to product, using hand tools and power tools. Inspects and tests parts or products for defects and to verify accuracy and adherence to standards. Aligns and assembles parts to produce completed product, using gauges and hand tools. Measures and cuts product to specified dimensions, using measuring and cutting instruments. Brushes or sprays surface of mold with parting agent or inserts paper to ensure smoothness and prevent sticking or seepage. Loads or stacks filled molds in oven, drier, or curing box, or on storage racks or carts. Assembles, inserts and adjusts wires, tubes, cores, fittings, rods, or patterns into mold, using hand tools and depth gauge. Opens mold and removes finished products. Molds parts or products using vibrator, handpress, or casting equipment and taps or tilts mold to ensure uniformity.

51-9196.00 Paper Goods Machine Setters, Operators, and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Adjusts guide assembly and folding mechanism according to specifications, using hand tools. Removes finished cores and stacks or places them on conveyor for transfer to other work areas. Examines completed work to detect defects and verify conformance to work orders. Cuts products to specified dimensions using hand or power cutters. Disassembles machines to repair or replace broken or worn parts using hand or power tools. Starts machine and regulates tension on pressure rolls, synchronizes speed of machine components and temperature of glue or paraffin. Places roll of paper or cardboard on machine feedtrack and threads paper through gluing, coating, and slitting rollers. Fills glue and paraffin reservoirs and loads automatic stapling mechanism. Observes operation of various machines to detect machine malfunctions and makes corrections for product to meet specifications. Installs attachments to machines for gluing, folding, printing, or cutting. Measures, spaces, and sets saw blades, cutters, and perforators, according to product specifications.

51-9197.00 Tire Builders Entry – Mid level position assuming education and experience prerequisite

Depresses pedal to rotate drum and winds specified number of plies around drum to form tire body. Starts rollers that bond tread and plies as drum revolves. Activates bead setters that press prefabricated beads onto plies and position rollers that turn ply edges under and over beads. Depresses pedal to collapse drum and lifts tire onto conveyor. Aligns tread with guide, starts drum to wind tread onto plies, and slices ends. Turns ends of plies under and over beads with steel rod. Positions ply stitcher rollers and drum according to width of stock, using hand tools and gauges. Brushes solvent onto ply to ensure adhesion and repeats process as specified, alternating direction of each ply to strengthen tire. Winds chafers and breaker onto plies. Rubs cement stick on drum edge to provide adhesive surface for plies. Pulls ply from supply rack and aligns ply with edge of drum. Cuts ply at splice point and presses ends together to form continuous band.

51-9198.01 Production Laborers Entry – Mid level position assuming education and experience prerequisite

Carries or hand trucks supplies to work stations. Loads and unloads items from machines, conveyors, and conveyance. Lifts raw materials, final products, and items packed for shipment, manually, or using hoist. Attaches slings, ropes, cables, or identification tags to objects, such as pipes, hoses, and bundles. Ties product in bundles for further processing or shipment, following prescribed procedure. Weighs raw materials for distribution. Records information, such as number of product tested, meter readings, and date and time product placed in oven. Examines product to verify conformance to company standards. Mixes ingredients, according to formula. Feeds item into processing machine. Inserts parts into partial assembly, during various stages of assembly to complete product. Counts finished product to determine completion of production order. Washes machines, equipment, vehicles and products, such as prints, rugs, and table linens. Folds parts of product and final product during processing. Separates product according to weight, grade, size, and composition of material used to produce product. Cuts or breaks flashing from materials or products. Places product in

equipment or on work surface for further processing, inspecting, or wrapping. Positions spout or chute of storage bin to fill containers, during processing. Threads ends of items, such as thread, cloth, and lace through needles, rollers, and around takeup tube. Breaks up defective products for reprocessing.

51-9198.02 Production Helpers Entry level position assuming education and experience prerequisite

Cleans and lubricates equipment. Dumps materials into machine hopper prior to mixing. Loads and unloads processing equipment or conveyance used to receive raw materials or to ship finished products. Marks or tags identification on parts. Places or positions equipment or partially assembled product for further processing, manually, or using hoist. Removes product, machine attachments, and waste material from machine. Reads gauges and charts and records data. Signals coworkers to facilitate moving product, during processing. Measures amount of ingredients, length of extruded article, or work to ensure conformance to specifications. Replaces damaged or worn equipment parts. Tends equipment to facilitate process. Mixes ingredients, according to procedure. Turns valves to regulate flow of liquids or air, to reverse machine, to start pump, and to regulate equipment. Starts machines or equipment to begin process. Observes operation and notifies equipment operator of malfunctions.

53-3021.00 Bus Drivers, Transit and Intercity Entry – Mid – Senior level position assuming education and experience prerequisite

Drives vehicle over specified route or to specified destination according to time schedule to transport passengers, complying with traffic regulations. Parks vehicle at loading area for passengers to board. Regulates heating, lighting, and ventilating systems for passenger comfort.

Records cash receipts and ticket fares. Reports delays or accidents. Inspects vehicle, and checks gas, oil, and water before departure.

Makes minor repairs to vehicle and changes tires. Advises passengers to be seated and orderly while on vehicle. Loads and unloads baggage in baggage compartment. Assists passengers with baggage and collects tickets or cash fares.

53-3022.00 Bus Drivers, School Entry – Mid – Senior level position assuming education and experience prerequisite

Drives bus to transport pupils over specified routes. Reports delays or accidents. Inspects bus and checks gas, oil, and water levels.

Makes minor repairs to bus. Regulates heating, lighting, and ventilating systems for passenger comfort. Complies with local traffic regulations.

Maintains order among pupils during trip.

53-4013.00 Rail Yard Engineers, Dinkey Operators, and Hostlers Entry – Mid – Senior level position assuming education and experience prerequisite

Drives switching locomotive within railroad yard or other establishment to switch railroad cars. Inspects engine at start and end of shift, and refuels and lubricates engine as needed. Reads daily car schedule to determine number of cars needed for next day's run. Inspects track for defects, and assists in installation or repair of rails and ties. Records number of cars available or number of cars sent to repair station and type of service needed. Observes oil, air, and steam pressure gauges, and water level, to ensure operating efficiency. Operates switching diesel engine to switch railroad cars, using remote control. Operates and controls dinkey engine to transport and shunt cars at industrial or mine site. Operates flatcar equipped with derrick, or railcar to transport personnel or equipment. Receives switching orders from yard conductor, and talks with conductor and other workers via radio- telephone, to exchange switching information. Drives locomotives to and from various stations in roundhouse, to have locomotives cleaned, serviced, repaired, or supplied.

53-4021.02 Railroad Yard Workers Entry – Mid – Senior level position assuming education and experience prerequisite

Throws track switches to route cars to different sections of yard. Rides atop cars that have been shunted and turns hand wheel to control speed or stop car at specified position. Connects air hose to car, using wrench. Attaches cable to cars being hoisted by cable or chain in mines, quarries or industrial plants. Opens and closes ventilation doors. Signals engineer to start and stop engine. Receives oral or written instructions indicating which cars are to be switched and track assignments. Raises lever to couple and uncouple cars for makeup and breakup of trains. Watches for and relays traffic signals to start and stop cars during shunting, using arm or lantern. Opens and closes chute gates to load and unload cars.

53-5011.01 Able Seamen Entry – Mid level position assuming education and experience prerequisite

Measures depth of water in shallow or unfamiliar waters, using lead line, and telephones or shouts information to bridge.

Steers ship and maintains visual communication with other ships. Relays specified signals to ships in vicinity, using visual signaling devices, such as blinker light and semaphore. Stands by wheel when ship is on automatic pilot and verifies accuracy of course by comparing with magnetic compass. Gives directions to crew engaged in cleaning wheelhouse and quarterdeck. Maintains ship's log while in port, and stands gangway watch to prevent unauthorized persons from boarding ship. Stows or removes cargo from ship's hold. Steers ship under direction of ship's commander or navigating officer, or directs helmsman to steer, following designated course. Breaks out, rigs, overhauls, and stows cargo-handling gear, stationary rigging, and running gear. Paints and chips rust on deck or superstructure of ship. Overhauls lifeboats and lifeboat gear, and lowers or raises lifeboats with winch or falls. Stands watch from bow of ship or wing of bridge to look for obstruction in path of ship.

53-5011.02 Ordinary Seamen and Marine Oilers Entry – Mid – Senior level position assuming education and experience prerequisite

Cleans and polishes wood trim, brass, and other metal parts. Paints or varnishes decks, superstructures, lifeboats, or sides of ship. Lubricates machinery, equipment, and engine parts, such as gears, shafts, and bearings. Splices and repairs cables and ropes, using marlinespike, wire cutters, twine, and hand tools. Stands watch from bow of ship or wing of bridge to look for obstructions in path of ship. Loads or unloads materials from vessel. Lowers and mans lifeboat in case of emergency. Records data in ship's log such as weather conditions and distance traveled. Assists engineer in overhauling and adjusting machinery. Turns wheel while observing compass to maintain ship on course. Reads pressure and temperature gauges or displays, and records data in engineering log. Examines machinery for specified pressure and flow of lubricants. Handles lines to moor vessel to wharf, tie up vessel to another vessel, or rig towing lines. Sweeps and washes deck, using broom, mops, brushes, and hose. Chips and cleans rust spots on deck, superstructure, and sides of ship, using wire brush and hand or air chipping machine.

53-5022.00 Motorboat Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Operates engine throttle and steering mechanism to guide boat on desired course. Secures boat to dock with mooring lines and casts off lines to depart. Gives directions for loading and seating in boat. Cleans and repairs boat hull and superstructure. Performs routine maintenance on boat engine and equipment. Maintains desired course, using compass or electronic navigational aides.

53-6021.00 Parking Lot Attendants Entry – Mid level position assuming education and experience prerequisite

Parks automobiles in parking lot, storage garage, or new car lot. Places numbered tag on windshield of automobile to be parked, and hands customer similar tag to be used in locating parked automobile. Patrols area to prevent thefts of parked automobiles or items in automobiles. Takes numbered tag from customer, locates car, and delivers it to customer, or directs customer to parked car. Collects parking fee from customer, based on charges for time automobile is parked. Signals or directs vehicle drivers with hands or flashlight to parking area. Lifts, positions, and removes barricades to open or close parking areas. Services vehicles with gas, oil, and water. Inspects vehicles to detect damage. Services cars in storage to protect tires, battery, and finish against deterioration. Keeps new car lot in order and maximizes use of space.

53-6031.00 Service Station Attendants Entry – Mid level position assuming education and experience prerequisite

Fills or allows customer to fill fuel tank of vehicle with gasoline or diesel fuel to specified level. Installs accessories, such as air or oil filter, battery, windshield wiper blades, fan belt, or lights. Collects cash from customer and makes change, or charges purchases to customer's credit card. Greases and lubricates vehicles or specified units, such as springs, universal joints, and steering knuckles, using grease gun or spray lubricant. Changes, tests, and repairs or replaces tires. Checks air pressure in tires, levels of fuel, motor oil, and other fluids, and adds air, oil, water, and required fluids. Adjusts brakes, replaces spark plugs, and makes other minor repairs. Cleans windshield or washes and waxes vehicle. Sells accessories and services, such as batteries, tires, lubrication services, and safety inspections. Assists in arranging merchandise displays and taking inventories. Prepares daily report of fuel, oil, and accessories sold in service station. Maintains customer records and follows up periodically with telephone, mail, or personal reminders of service due. Cleans parking area, offices, and equipment, and removes trash.

53-7011.00 Conveyor Operators and Tenders Entry – Mid – Senior level position assuming education and experience prerequisite

Manipulates controls, levers, and valves to start pumps, auxiliary equipment, or conveyors and adjust equipment positions, speed, timing, and material flow. Distributes materials, supplies, and equipment to work stations, using lifts and trucks. Records production data, such as weight, type, quantity, and storage locations of materials, and documents



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equipment downtime. Affixes identifying information to materials or products, using hand tools. Collects samples of materials or products for laboratory analysis and ensure conformance to specifications. Weighs or measures materials and products, using scales or other measuring instruments, to verify specified tonnage and prevent overloads. Cleans, sterilizes, and maintains equipment, machinery, and work stations, using hand tools, shovels, brooms, chemicals, hoses, and lubricants. Repairs or replaces equipment components or parts such as blades, rolls, and pumps. Reads production and delivery schedules, and confers with supervisor to determine processing procedures. Loads, unloads, or adjusts materials or products on conveyors by hand or using lifts and hoists. Inspects equipment and machinery to prevent loss of materials or products during transit. Moves, assembles, and connects hoses or nozzles to material hoppers, storage tanks, conveyor sections or chutes, and pumps. Signals workers in other departments to move materials, products, or machinery, or notifies workstations of shipments enroute and estimated delivery times. Stops equipment or machinery and clears jams, using poles, bars, and hand tools, or removes damaged materials from conveyors. Observes conveyor operations and monitors lights, dials, and gauges to maintain specified operating levels and detect equipment malfunctions.

53-7032.01 Excavating and Loading Machine Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Operates power machinery, such as powered-shovel, stripping-shovel, scraper loader (mucking machine), or back-hoe (trench-excavating machine) to excavate and load material. Measures and verifies levels of rock or gravel, base, and other excavated material. Lubricates and repairs machinery and replaces parts, such as gears, bearings, and bucket teeth. Directs ground workers engaged in activities, such as moving stakes or markers. Receives written or oral instructions to move or excavate material. Observes hand signals, grade stakes, and other markings when operating machines.

53-7033.00 Loading Machine Operators, Underground Mining Entry – Mid – Senior level position assuming education and experience prerequisite

Operates levers to move conveyor boom or shovel to move mine contents into car or onto conveyor. Drives machine into pile of material blasted from working face. Pries off loose material from roof and moves it into path of machine with crowbar. Starts conveyor boom and gathering-arm motors. Moves trailing electrical cable clear of obstructions, using rubber safety gloves. Advances machine to gather material and convey it into car at rear. Stops gathering arms when car is full.

53-7041.00 Hoist and Winch Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Operates equipment, such as hoist, winch, or hydraulic boom, to lift and pull loads and materials. Repairs, maintains, and adjusts equipment, using hand tools. Moves or repositions hoists, winches, loads, and materials, manually or using equipment and machines such as trucks, cars, and hand trucks. Tends auxiliary equipment, such as jacks, slings, cables, or stop blocks, to facilitate moving items or materials for further processing. Attaches, fastens, and disconnects cables or lines to loads and materials, using hand tools. Climbs ladder to facilitate positioning and setup of vehicle-mounted derrick. Selects loads or materials according to weight and size specifications. Observes equipment gauges and indicators and hand signals to verify depth of materials, instruments, or position of load. Starts engine of hoist or winch to move loads or materials, using controls such as levers, pedals, and buttons.

53-7051.00 Industrial Truck and Tractor Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Moves controls to drive gasoline- or electric-powered trucks, cars, or tractors and transport materials between loading, processing, and storage areas. Hooks tow trucks to trailer hitches and fastens attachments, such as graders, plows, rollers, and winch cables, to tractor, using hitchpins. Turns valves and opens chutes to dump, spray, or release materials from dump cars or storage bins into hoppers. Manually load or unload materials onto or off pallets, skids, platforms, cars, or lifting devices. Weighs materials or products and records weight and other production data on tags or labels. Signals workers to discharge, dump, or level materials. Operates or tends automatic stacking, loading, packaging, or cutting machines. Performs routine maintenance on vehicles and auxiliary equipment, such as cleaning, lubricating, recharging batteries, fueling, or replacing liquefied-gas tank. Moves levers and controls to operate lifting devices, such as forklifts, lift beams and swivel-hooks, hoists, and elevating platforms, to load, unload, transport, and stack material. Positions lifting device under, over, or around loaded pallets, skids, and boxes, and secures material or products for transport to designated areas.

53-7061.00 Cleaners of Vehicles and Equipment Entry – Mid level position assuming education and experience prerequisite

Scrubs, scrapes, or sprays machine parts, equipment, or vehicles, using scrapers, brushes, cleaners, disinfectants, insecticides, acid, and abrasives. Pre-soaks or rinses machine parts, equipment, or vehicles by immersing objects in cleaning solutions or water, manually or using hoists. Presses buttons to activate cleaning equipment or machines. Turns valves or handles on equipment to regulate pressure and flow of water, air, steam, or abrasives from sprayer nozzles. Sweeps, shovels, or vacuums loose debris and salvageable scrap into containers and removes from work area. Monitors operation of cleaning machines and stops machine or notifies supervisor when malfunctions occur. Mixes cleaning solutions and abrasive compositions and other compounds according to formula. Records production and operational data on specified forms. Collects and tests samples of cleaning solutions and vapors. Transports materials, equipment, or supplies to and from work area, using carts or hoists. Lubricates machinery, vehicles, and equipment, and performs minor repairs and adjustments, using hand tools. Applies paints, dyes, polishes, re-conditioners, and masking materials to vehicles to preserve, protect, or restore color and condition. Examines and inspects parts, equipment, and vehicles for cleanliness, damage, and compliance with standards or regulations. Places objects on drying racks or dyes surfaces, using cloth, squeegees, or air compressors. Disassembles and reassembles machines or equipment, or removes and reattaches vehicle parts and trim, using hand tools. Maintains inventories of supplies. Connects hoses and lines to pumps and other equipment. Turns valves or disconnects hoses to eliminate water, cleaning solutions, or vapors from machinery or tanks.

53-7062.01 Stevedores, Except Equipment Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Carries or moves cargo by hand truck to wharf and stacks cargo on pallets to facilitate transfer to and from ship. Guides load being lifted to prevent swinging. Stacks cargo in transit shed or in hold of ship as directed. Attaches and moves slings used to lift cargo. Shores cargo in ship's hold to prevent shifting during voyage.

53-7062.02 Grips and Set-Up Workers, Motion Picture Sets, Studios, and Stages Entry – Mid – Senior level position assuming education and experience prerequisite

Arranges equipment preparatory to sessions and performances following work order specifications and handles props during performances. Produces special lighting and sound effects during performances, using various machines and devices. Sews and repairs items using materials and hand tools such as canvas and sewing machines. Orders equipment and maintains equipment storage areas. Connects electrical equipment to power source and tests equipment before performance. Reads work orders and follows oral instructions to determine specified material and equipment to be moved and its relocation. Erects canvas covers to protect equipment from weather. Adjusts controls to guide, position and move equipment, such as cranes, booms, and cameras. Adjusts controls to raise and lower scenery and stage curtain during performance, following cues. Rigs and dismantles stage or set equipment such as, frames, scaffolding, platforms, or backdrops, using carpenter's hand tools.

53-7062.03 Freight, Stock, and Material Movers, Hand Entry – Mid level position assuming education and experience prerequisite

Loads and unloads materials to and from designated storage areas, such as racks and shelves, or vehicles, such as trucks. Directs spouts and positions receptacles, such as bins, carts, and containers, to receive loads. Stacks or piles materials, such as lumber, boards, or pallets. Secures lifting attachments to materials and conveys load to destination, using crane or hoist. Transports receptacles to and from designated areas, by hand or using dollies, hand trucks, and wheelbarrows. Shovels materials, such as gravel, ice or spilled concrete, into containers, bins or onto conveyors. Reads work orders or receives and listens to oral instructions to determine work assignment. Bundles and bands material, such as fodder and tobacco leaves, using banding machines. Assembles product containers and crates, using hand tools and pre-cut lumber. Adjusts or replaces equipment parts, such as rollers, belts, plugs and caps, using hand tools. Records number of units handled and moved, using daily production sheet or work tickets. Attaches identifying tags or marks information on containers. Cleans work area, using brooms, rags, and cleaning compounds. Installs protective devices, such as bracing, padding or strapping, to prevent shifting or damage to items being transported. Sorts and stores items according to specifications.

53-7063.00 Machine Feeders and Offbearers Entry – Mid – Senior level position assuming education and experience prerequisite

Feeds materials into machines and equipment to process and manufacture products. Shovels or scoops materials into containers, machines, or equipment for processing, storage or transport. Transfers materials and products between storage areas and machinery and equipment. Fastens, packages, or stacks materials and products, using hand tools and fastening equipment. Weighs or measures materials or products to ensure conformance to specifications. Records production and operational information and data on specified forms. Identifies and marks materials, products, and

samples, following instructions. Cleans and maintains machinery, equipment, and work areas to ensure proper functioning and safe working conditions. Moves controls to start, stop, or adjust machinery and equipment. Modifies materials and products during manufacturing process to meet requirements. Inspects materials and products for defects and to ensure conformance to specifications. Sorts and selects materials and products and rejects defective pieces, following specified instructions and standards. Adds chemicals, solutions, or ingredients to machines or equipment to ensure manufacturing process meets specifications. Off bears materials and products from machines and equipment, using hand tools. Loads materials and products into machines and equipment, using hand tools and moving devices. Removes materials and products from machines and equipment, using hand tools and moving devices.

53-7071.01 Gas Pumping Station Operators Entry – Mid level position assuming education and experience prerequisite

Opens valve to allow gas to flow into and out of compressors. Cleans, lubricates, and adjusts compressors, using hand tools. Observes pressure gauges to determine consumption rate variations and turns knobs or switches to regulate pressures. Reads gas meters and records amount of gas received and dispensed from holders.

53-7071.02 Gas Compressor Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Moves controls and turns valves to start compressor engines, pumps, and auxiliary equipment. Operates equipment to control transmission of natural gas through pipelines. Observes operation of equipment to detect malfunctions. Conducts chemical tests to evaluate quality of gas. Performs minor repairs on equipment, using hand tools. Records instrument readings and operational changes in operating log. Operates or tends equipment to purify gases. Monitors meters, gauges, and recording instrument charts to ensure specified temperature, pressure, and flow of gas through system.

53-7072.00 Pump Operators, Except Wellhead Pumpers Entry – Mid – Senior level position assuming education and experience prerequisite

Turns valves and starts pump to commence or regulate flow of substances, such as gases, liquids, slurries, or powdered materials. Connects hoses and pipes to pumps and vessels, using hand tools. Adds chemicals and solutions to tank to ensure specifications are met. Communicates with workers to start flow of materials or substance. Collects and delivers sample solutions for laboratory analysis. Transfers materials to and from vessels, using moving equipment. Tests materials and solutions, using testing equipment. Records information such as type and quantity of material, and operating data. Inspects and reports vessel and pump abnormalities such as leaks, pressure, and temperature fluctuations. Cleans and maintains pumps and vessels, using hand tools and equipment. Tends auxiliary equipment such as water treatment and refrigeration units and heat exchanges. Observes gauges and flow meter to ascertain specifications are met, such as tank level, chemical amounts, and pressure. Tends vessels that store substances such as gases, liquids, slurries, or powdered materials.

53-7073.00 Wellhead Pumpers Entry – Mid – Senior level position assuming education and experience prerequisite

Starts compressor engines and diverts oil from storage tanks into compressor units and auxiliary equipment to recover natural gas from oil. Opens valves to return compressed gas to bottoms of specified wells to re-pressurize them and force oil to surface. Reads tank gauges and pump meters, and keeps production records. Starts pumps and opens valves to pump oil from wells into storage tanks. Operates engines and pumps from central power plant to shut off wells and to switch flow of oil into storage tanks.

53-7081.00 Refuse and Recyclable Material Collectors Entry – Mid – Senior level position assuming education and experience prerequisite

Drives truck. Starts hoisting device that raises refuse bin attached to rear of truck and dumps contents into opening in enclosed truck body.

53-7111.00 Shuttle Car Operators Entry – Mid – Senior level position assuming education and experience prerequisite

Positions shuttle car under discharge conveyor of loading machine and observes that materials are loaded according to specifications. Maneuvers shuttle car to keep its nose under discharge conveyor. Moves mine cars into position to be loaded from shuttle car. Drives loaded shuttle car to ramp and moves controls to discharge load into mine car or onto conveyor. Controls conveyor, which runs entire length of shuttle car to apportion load as loading progresses.



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53-7121.00 Tank Car, Truck, and Ship Loaders Entry – Mid – Senior level position assuming education and experience prerequisite

Starts pumps and adjusts valves to regulate flow of product to vessel, utilizing knowledge of loading procedures. Monitors product movement to and from storage tanks and coordinates with other workers to ensure constant product flow. Unloads cars by connecting hose to outlet plugs and pumping compressed air into car forcing liquid into storage tank. Verifies tank car, barge, or truckload number to ensure car placement accuracy based on written or verbal instructions. Weighs and inspects vessels to prevent contamination and to ensure cleanliness and compliance to loading procedures. Tests vessels for leaks, damage, and defects, and repairs or replaces defective parts. Reads meter to verify content, temperature, and volume of liquid load. Copies and tacks load specifications onto tank, and seals outlet valves on tank car, barge, or truck. Records operating data, such as products and quantities pumped, gauge readings, and operating time, manually or using computer. Retrieves liquid sample and performs tests on contents or delivers sample to laboratory for testing. Operates blenders and heaters to mix, blend and heat products