Occupational Employment Statistics

Dictionary of Occupations

2002 Survey

Management Occupations

Top Executives

11-1011 Chief Executives
(County Commissioner) Determine and formulate policies and provide the overall direction of companies or private and public sector organizations within the guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.
Illustrative Examples: Board Member; Chief Operating Officer; President

11-1021 General and Operations Managers
(Park Superintendent) Plan, direct, or coordinate the operations of companies or public and private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Include owners and managers who head small business establishments whose duties are primarily managerial. Exclude "First-Line Supervisors/Managers of Retail Sales Workers" (41-1011) and workers in other small establishments.
Illustrative Examples: Industrial Organization Manager; District Manager; Department Store General Manager

11-1031 Legislators
(Council Member) Develop laws and statutes at the Federal, State, or local level. Include only elected officials.
Illustrative Examples: Representative; Senator

Advertising, Marketing, Promotions, Public Relations, and Sales Managers

11-2011 Advertising and Promotions Managers
(Media Director) Plan and direct advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or give-aways, to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.
Illustrative Examples: Campaign Director; Circulation Director

11-2021 Marketing Managers
Determine the demand for products and services offered by a firm and its competitors and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.
Illustrative Examples: Fashion Coordinator; Marketing Director

11-2022 Sales Managers
(Customer Service Manager) Direct the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.
Illustrative Examples: Director of Sales; Export Manager; Regional Sales Manager

11-2031 Public Relations Managers
Plan and direct public relations programs designed to create and maintain a favorable public image for employer or client; or if engaged in fundraising, plan and direct activities to solicit and maintain funds for special projects and nonprofit organizations.
Illustrative Examples: Fundraising Director; Public Information Director; Publicity Director

Operations Specialties Managers

11-3011 Administrative Services Managers
(Facilities Manager) Plan, direct, or coordinate supportive services of an organization, such as recordkeeping, mail distribution, telephone operator/receptionist, and other office support services. May oversee facilities planning and maintenance and custodial operations. Exclude "Purchasing Managers" (11-3061).
Illustrative Example: Space Officer

11-3021 Computer and Information Systems Managers
(Data Processing Manager) Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. Exclude "Computer Specialists" (15-1011 through 15-1099).
Illustrative Examples: Computer Programming Manager; Data Systems Manager

11-3031 Financial Managers
(City Controller, Controller, County Treasurer) Plan, direct, and coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.
Illustrative Examples: Bank Director; Comptroller; Budget Director

11-3041 Compensation and Benefits Managers
Plan, direct, or coordinate compensation and benefits activities and staff of an organization. Include job analysis and position description managers.
Illustrative Examples: Employee Benefits Director; Job Analysis Manager; Wage and Salary Administrator

11-3042 Training and Development Managers
Plan, direct, or coordinate the training and development activities and staff of an organization.
Illustrative Examples: Efficiency Manager; Education and Training Manager; Training Director

11-3049 Human Resources Managers, All Other
All Human Resources Managers not listed separately.
Illustrative Examples: Director of Industrial Relations; Employee Wellness/Fitness Coordinator; Personnel Director

11-3051 Industrial Production Managers
(Quality Control Manager) Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.
Illustrative Examples: Factory Superintendent; Plant Manager

11-3061 Purchasing Managers
(Procurement Manager) Plan, direct, or coordinate the activities of buyers, purchasing officers, and related workers involved in purchasing materials, products, and services. Include wholesale or retail trade merchandising managers and procurement managers.
Illustrative Examples: Director of Purchasing; Merchandise Manager

11-3071 Transportation, Storage, and Distribution Managers
(Airport Manager, Logistics Manager) Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with governmental policies and regulations. Include logistics managers.
Illustrative Examples: Schedule Planning Manager; Warehouse Manager

Other Management Occupations

11-9011 Farm, Ranch, and Other Agricultural Managers
(Nursery and Greenhouse Manager) On a paid basis, manage farms, ranches, aquacultural operations, greenhouses, nurseries, timber tracts, cotton gins, packing houses, or other agricultural establishments for employers. Carry out production, financial, and marketing decisions relating to the managed operations following guidelines from the owner. May contract tenant farmers or producers to carry out the day-to-day activities of the managed operation. May supervise planting, cultivating, harvesting, and marketing activities. May prepare cost, production, and other records. May perform physical work and operate machinery.
Illustrative Examples: Fruit Grower; Farm Livestock Manager

11-9012 Farmers and Ranchers
On an ownership or rental basis, operate farms, ranches, greenhouses, nurseries, timber tracts, or other agricultural production establishments which produce crops, horticultural specialties, livestock, poultry, finfish, shellfish, or animal specialties. Include operators of cotton gins, packing houses, and other post-harvest operations. May plant, cultivate, harvest, perform post-harvest activities, and market crops and livestock; may hire, train, and supervise farm workers or supervise a farm labor contractor; may prepare cost, production, and other records. May maintain and operate machinery and perform physical work.
Illustrative Examples: Beekeeper; Dairy Farmer; Tobacco Grower

11-9021 Construction Managers
(General Contractor) Plan, direct, coordinate, or budget, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation. Include specialized construction fields, such as carpentry or plumbing. Include general superintendents, project managers, and constructors who manage, coordinate, and supervise the construction process.
Illustrative Examples: Masonry Contractor Administrator; Developer

11-9031 Education Administrators, Preschool and Child Care Center/Program
Plan, direct, or coordinate the academic and nonacademic activities of preschool and child care centers or programs. Exclude "Preschool Teachers" (25-2011).
Illustrative Examples: Director of Child Care Center; Head Start Director

11-9032 Education Administrators, Elementary and Secondary School
(School Principal) Plan, direct, or coordinate the academic, clerical, or auxiliary activities of public or private elementary or secondary level schools.
Illustrative Examples: Director of Physical Education; Curriculum Director

11-9033 Education Administrators, Postsecondary
(Dean, Registrar) Plan, direct, or coordinate research, instructional, student administration and services, and other educational activities at postsecondary institutions, including universities, colleges, and junior and community colleges.
Illustrative Example: Director of Student Affairs

11-9039 Education Administrators, All Other
All education administrators not listed separately.
Illustrative Examples: Director of Extension Work; Director of Vocational Training; Health Education Director

11-9041 Engineering Managers
Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields. Exclude "Natural Sciences Managers" (11-9121).
Illustrative Examples: Engineering Research Manager; Safety Director; Technical Director

11-9051 Food Service Managers
Plan, direct, or coordinate activities of an organization or department that serves food and beverages.
Illustrative Examples: Banquet Director; Restaurant Manager; Catering Manager

11-9061 Funeral Directors
(Mortician) Perform various tasks to arrange and direct funeral services, such as coordinating transportation of body to mortuary for embalming, interviewing family or other authorized person to arrange details, selecting pallbearers, procuring official for religious rites, and providing transportation for mourners.
Illustrative Examples: Funeral Home Manager; Undertaker

11-9071 Gaming Managers
(Casino Manager) Plan, organize, direct, control, or coordinate gaming operations in a casino. Formulate gaming policies for their area of responsibility.
Illustrative Examples: Blackjack Manager; Dice Manager

11-9081 Lodging Managers
(Hotel Manager) Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations. Exclude "Food Service Managers" (11-9051) in lodging establishments.
Illustrative Examples: Director of Housing; Innkeeper

11-9111 Medical and Health Services Managers
Plan, direct, or coordinate medicine and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.
Illustrative Examples: Director of Occupational Therapy; Medical Records Administrator; Public Health Administrator

11-9121 Natural Sciences Managers
Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, mathematics, statistics, and research and development in these fields. Exclude "Engineering Managers" (11-9041) and "Computer and Information Systems Managers" (11-3021).
Illustrative Examples: Geophysical Manager; Research and Development Director; Wildlife Manager

11-9131 Postmasters and Mail Superintendents
Direct and coordinate operational, administrative, management, and supportive services of a U.S. post office; or coordinate activities of workers engaged in postal and related work in assigned post office.

11-9141 Property, Real Estate, and Community Association Managers
(Apartment Manager) Plan, direct, or coordinate selling, buying, leasing, or governance activities of commercial, industrial, or residential real estate properties. Include managers of homeowner and condominium associations, rented or leased housing units, buildings, or land (including rights-of-way).
Illustrative Examples: Condominium Association Manager; Trailer Park Manager

11-9151 Social and Community Service Managers
(Public Welfare Director, Volunteer Services Manager) Plan, organize, or coordinate the activities of a social service program or community outreach organization. Oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits. Work may involve directing social workers, counselors, or probation officers.
Illustrative Examples: Child Welfare Director; Youth Program Director; Director of Casework Services

11-9199 Managers, All Other
All managers not listed separately.
Illustrative Examples: City Clerk; Publisher; Communications Manager

Business and Financial Operations Occupations

Business Operations Specialists

13-1011 Agents and Business Managers of Artists, Performers, and Athletes
Represent and promote artists, performers, and athletes to prospective employers. May handle contract negotiation and other business matters for clients.
Illustrative Examples: Booking Agent; Boxing Promoter; Theatrical Agent

13-1021 Purchasing Agents and Buyers, Farm Products
Purchase farm products either for further processing or resale. Include Christmas tree contractors, grain brokers and market operators, grain buyers, and tobacco buyers.
Illustrative Examples: Cotton Broker; Livestock Buyer; Tobacco Buyer

13-1022 Wholesale and Retail Buyers, Except Farm Products
Buy merchandise or commodities, other than farm products, for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze past buying trends, sales records, price, and quality of merchandise to determine value and yield. Select, order, and authorize payment for merchandise according to contractual agreements. May conduct meetings with sales personnel and introduce new products. Include assistant buyers.
Illustrative Examples: Importer; Merchandiser; Wholesale Jobber

13-1023 Purchasing Agents, Except Wholesale, Retail, and Farm Products
Purchase machinery, equipment, tools, parts, supplies, or services necessary for the operation of an establishment. Purchase raw or semi-finished materials for manufacturing. Include contract specialists, field contractors, purchasers, price analysts, tooling coordinators, and media buyers. Exclude "Purchasing Agents and Buyers, Farm Products" (13-1021) and "Wholesale and Retail Buyers, Except Farm Products" (13-1022).
Illustrative Examples: Fuel Buyer; Lumber Buyer; Radio Time Buyer

13-1031 Claims Adjusters, Examiners, and Investigators
(Insurance Appraiser) Review settled claims to determine that payments and settlements have been made in accordance with company practices and procedures, ensuring that proper methods have been followed. Report overpayments, underpayments, and other irregularities. Confer with legal counsel on claims requiring litigation.
Illustrative Examples: Health Insurance Adjuster; Arson Investigator; Claims Agent

13-1032 Insurance Appraisers, Auto Damage
Appraise automobile or other vehicle damage to determine cost of repair for insurance claim settlement and seek agreement with automotive repair shop on cost of repair. Prepare insurance forms to indicate repair cost or cost estimates and recommendations.
Illustrative Example: Auto Damage Estimator

13-1041 Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation
(Coroner) Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and other compliance and enforcement inspection activities not classified elsewhere. Exclude "Tax Examiners, Collectors, and Revenue Agents" (13-2081) and "Financial Examiners" (13-2061).
Illustrative Examples: Truant Officer; Inspector of Weights and Measures

13-1051 Cost Estimators
Prepare cost estimates for product manufacturing, construction projects, or services to aid management in bidding on or determining price of product or service. May specialize according to particular service performed or type of product manufactured.
Illustrative Examples: Construction Estimator; Crating and Moving Estimator; Job Estimator

13-1061 Emergency Management Specialists
(Public Safety Director) Coordinate disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures for natural (e.g., hurricanes, floods, earthquakes), wartime, or technological (e.g., nuclear power plant emergencies, hazardous materials spills) disasters or hostage situations.
Illustrative Example: Director of Civil Defense

13-1071 Employment, Recruitment, and Placement Specialists
Recruit and place workers.
Illustrative Examples: Employment Interviewer; Personnel Recruiter; Placement Assistant

13-1072 Compensation, Benefits, and Job Analysis Specialists
Conduct programs of compensation and benefits and job analysis for employer. May specialize in specific areas, such as position classification and pension programs.
Illustrative Examples: Occupational Analyst; Relocation Director; Wage Conciliator

13-1073 Training and Development Specialists
Conduct training and development programs for employees.
Illustrative Examples: Training Coordinator; Workforce Development Specialist; Supervisor, Training Personnel

13-1079 Human Resources, Training, and Labor Relations Specialists, All Other
All human resources, training, and labor relations specialists not listed separately.
Illustrative Examples: Personnel Arbitrator; Employee Relations Specialist

13-1081 Logisticians
Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.
Illustrative Examples: Logistics Engineer; Logistics Analyst; Logistics Planner

13-1111 Management Analysts
(Business Consultant, Program Analyst) Conduct organizational studies and evaluations, design systems and procedures, conduct work simplifications and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Include program analysts and management consultants. Exclude "Computer Systems Analysts" (15-1051) and "Operations Research Analysts" (15-2031).
Illustrative Example: Industrial Analyst; Price Analyst

13-1121 Meeting and Convention Planners
Coordinate activities of staff and convention personnel to make arrangements for group meetings and conventions.
Illustrative Examples: Conference Planner; Conference Service Coordinator; Convention Manager

13-1199 Business Operations Specialists, All Other
All business operations specialists not listed separately.
Illustrative Examples: Grant Coordinator; Liaison Officer; Purser

Financial Specialists

13-2011 Accountants and Auditors
(Bursar) Examine, analyze, and interpret accounting records for the purpose of giving advice or preparing statements. Install or advise on systems of recording costs or other financial and budgetary data.
Illustrative Examples: Certified Public Accountant; Tax Accountant

13-2021 Appraisers and Assessors of Real Estate
Appraise real property to determine its fair value. May assess taxes in accordance with prescribed schedules.
Illustrative Examples: Building Appraiser; County Assessor; Property Evaluator

13-2031 Budget Analysts
Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports for the purpose of maintaining expenditure controls.
Illustrative Examples: Budget Examiner; Fiscal Agent; Fiscal Officer

13-2041 Credit Analysts
Analyze current credit data and financial statements of individuals or firms to determine the degree of risk involved in extending credit or lending money. Prepare reports with this credit information for use in decision-making.
Illustrative Examples: Credit Negotiator; Escrow Representative; Factorer

13-2051 Financial Analysts
Conduct quantitative analyses of information affecting investment programs of public or private institutions.
Illustrative Examples: Bond Analyst; Investment Analyst; Securities Consultant

13-2052 Personal Financial Advisors
(Estate Planner) Advise clients on financial plans utilizing knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate. Duties include assessing clients' assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives to establish investment strategies.
Illustrative Examples: Budget Counselor; Financial Planner

13-2053 Insurance Underwriters
Review individual applications for insurance to evaluate degree of risk involved and determine acceptance of applications.
Illustrative Examples: Bond Underwriter; Insurance Analyst

13-2061 Financial Examiners
Enforce or ensure compliance with laws and regulations governing financial and securities institutions and financial and real estate transactions. May examine, verify correctness of, or establish authenticity of records.
Illustrative Examples: Bank Examiner; Payroll Examiner; Pension Examiner

13-2071 Loan Counselors
(Credit Counselor) Provide guidance to prospective loan applicants who have problems qualifying for traditional loans. Guidance may include determining the best type of loan and explaining loan requirements or restrictions.
Illustrative Examples: Farm Mortgage Agent; Financial Aid Counselor

13-2072 Loan Officers
(Loan Examiner) Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and methods of payments. Include mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters.
Illustrative Examples: Loan Reviewer; Escrow Officer; Mortgage Consultant

13-2081 Tax Examiners, Collectors, and Revenue Agents
Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.
Illustrative Examples: Tax Investigator; Revenue Agent; Tax Auditor

13-2082 Tax Preparers
Prepare tax returns for individuals or small businesses but do not have the background or responsibilities of an accredited or certified public accountant.
Illustrative Examples: Income Tax Advisor; Income Tax Consultant; Tax Specialist

13-2099 Financial Specialists, All Other
All financial specialists not listed separately.
Illustrative Examples: Bail Bondsman; Executor of Estate; Foreign Exchange Trader

Computer and Mathematical Occupations

Computer Specialists

15-1011 Computer and Information Scientists, Research
Conduct research into fundamental computer and information science as theorists, designers, or inventors. Solve or develop solutions to problems in the field of computer hardware and software.

15-1021 Computer Programmers
Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.
Illustrative Examples: Computer Programmer Aide; Mainframe Programmer; Systems Programmer

15-1022 Computer Programmers, Non R&D
Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.

15-1023 Computer Programmers, R&D
These persons spend the majority of their time performing research and development activities relating to computer programming.

15-1031 Computer Software Engineers, Applications
Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. Exclude "Computer Hardware Engineers" (17-2061).
Illustrative Examples: Applications Developer; Programmer Analyst; Software Designer

15-1032 Computer Software Engineers, Systems Software
Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of computer science, engineering, and mathematical analysis.
Illustrative Example: EDP Systems Engineer

15-1034 Computer Software Engineers, Applications, Non-R&D
Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. Exclude "Computer Hardware Engineers, Non-R&D" (17-2062).

15-1035 Computer Software Engineers, Applications, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Computer Software Engineers, Applications. Exclude "Computer Hardware Engineers, R&D" (17-2063).

15-1036 Computer Software Engineers, Systems Software, Non-R&D
Design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of computer science, engineering, and mathematical analysis.

15-1037 Computer Software Engineers, Systems Software, R&D
These persons spenc the majority of their time performing research and development activities relating to their work as Computer Software Engineers, Systems Software.

15-1041 Computer Support Specialists
(Help Desk Representative) Provide technical assistance to computer system users. Answer questions or resolve computer problems for clients in person, via telephone or from remote location. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Exclude "Network and Computer Systems Administrators" (15-1071).
Illustrative Examples: Customer Support Analyst; Help Desk Technician; Work Station Support Specialist

15-1051 Computer Systems Analysts
Analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software. Exclude persons working primarily as "Engineers" (17-2011 through 17-2199), "Mathematicians" (15-2021), or "Scientists" (19-1011 through 19-3099). May supervise computer programmers.
Illustrative Examples: Health Systems Computer Analyst; Data Processing Systems Project Planner; Information Systems Consultant

15-1052 Computer Systems Analysts, Non R&D
Analyze data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations.

15-1053 Computer Systems Analysts, R&D
These persons spend the majority of their time performing research and development activities involving electronic data processing.

15-1061 Database Administrators
Coordinate changes to computer databases, test and implement the database applying knowledge of database management systems. May plan, coordinate, and implement security measures to safeguard computer databases.
Illustrative Examples: Automatic Data Processing Planner; Database Design Analyst; Database Security Administrator

15-1071 Network and Computer Systems Administrators
(LAN/WAN Administrator) Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintain network hardware and software. Monitor network to ensure network availability to all system users and perform necessary maintenance to support network availability. May supervise other network support and client server specialists and plan, coordinate, and implement network security measures. Exclude "Computer Support Specialists" (15-1041).
Illustrative Examples: Network Control Operator; Network Security Administrator

15-1081 Network Systems and Data Communications Analysts
(Internet Developer, Webmaster) Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems. Perform network modeling, analysis, and planning. Research and recommend network and data communications hardware and software. Include telecommunications specialists who deal with the interfacing of computer and communications equipment. May supervise computer programmers.
Illustrative Example: Systems Integrator

15-1099 Computer Specialists, All Other
All computer specialists not listed separately.
Illustrative Example: Computer Laboratory Technician

Mathematical Science Occupations

15-2011 Actuaries
Analyze statistical data, such as mortality, accident, sickness, disability, and retirement rates and construct probability tables to forecast risk and liability for payment of future benefits. May ascertain premium rates required and cash reserves necessary to ensure payment of future benefits.
Illustrative Example: Actuarial Mathematician

15-2021 Mathematicians
Conduct research in fundamental mathematics or in application of mathematical techniques to science, management, and other fields. Solve or direct solutions to problems in various fields by mathematical methods.
Illustrative Examples: Algebraist; Cipher Expert

15-2031 Operations Research Analysts
(Procedure Analyst) Formulate and apply mathematical modeling and other optimizing methods using a computer to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May develop related software, service, or products. Frequently concentrates on collecting and analyzing data and developing decision support software. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.
Illustrative Examples: Method Consultant; Standards Analyst

15-2041 Statisticians
Engage in the development of mathematical theory or apply statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields, such as bio-statistics, agricultural statistics, business statistics, economic statistics, or other fields. Include mathematical statisticians.
Illustrative Examples: Biometrician; Sampling Expert; Statistical Analyst

15-2091 Mathematical Technicians
Apply standardized mathematical formulas, principles, and methodology to technological problems in engineering and physical sciences in relation to specific industrial and research objectives, processes, equipment, and products.

15-2099 Mathematical Science Occupations, All Other
All mathematical scientists not listed separately.
Illustrative Examples: Geometrician; Harmonic Analyst; Weight Analyst

Architecture and Engineering Occupations

Architects, Surveyors, and Cartographers

17-1011 Architects, Except Landscape and Naval
Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property.
Illustrative Examples: Architectural Designer; Building Consultant; Site Planner

17-1012 Landscape Architects
Plan and design land areas for such projects as parks and other recreational facilities, airports, highways, hospitals, schools, land subdivisions, and commercial, industrial, and residential sites.
Illustrative Examples: Environmental Planner; Land Planner; Landscape Designer

17-1021 Cartographers and Photogrammetrists
Collect, analyze, and interpret geographic information provided by geodetic surveys, aerial photographs, and satellite data. Research, study, and prepare maps and other spatial data in digital or graphic form for legal, social, political, educational, and design purposes. May work with Geographic Information Systems (GIS). May design and evaluate algorithms, data structures, and user interfaces for GIS and mapping systems.
Illustrative Examples: Field Map Editor; Mapper

17-1022 Surveyors
Make exact measurements and determine property boundaries. Provide data relevant to the shape, contour, gravitation, location, elevation, or dimension of land or land features on or near the earth's surface for engineering, mapmaking, mining, land evaluation, construction, and other purposes.
Illustrative Examples: Geodetic Surveyor; Land Examiner; Mineral Surveyor

Engineers

17-2011 Aerospace Engineers
Perform a variety of engineering work in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.
Illustrative Examples: Aerodynamicist; Flight Test Engineer; Aeronautical Engineer

17-2021 Agricultural Engineers
Apply knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing of agricultural products.
Illustrative Examples: Farm Equipment Engineer; Agricultural Research Engineer

17-2031 Biomedical Engineers
Apply knowledge of engineering, biology, and biomechanical principles to the design, development, and evaluation of biological and health systems and products, such as artificial organs, prostheses, instrumentation, medical information systems, and heath management and care delivery systems.

17-2041 Chemical Engineers
(Fuels Engineer) Design chemical plant equipment and devise processes for manufacturing chemicals and products, such as gasoline, synthetic rubber, plastics, detergents, cement, paper, and pulp, by applying principles and technology of chemistry, physics, and engineering.
Illustrative Examples: Absorption and Adsorption Engineer; Explosives Engineer

17-2051 Civil Engineers
(Municipal Engineer) Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units. Include architectural, structural, traffic, ocean, and geo-technical engineers. Exclude "Hydrologists" (19-2043).
Illustrative Examples: Bridge Engineer; Construction Engineer; Concrete Engineer

17-2052 Civil Engineers, Non-R&D
Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units. Include architectural, structural, traffic, ocean, and geo-technical engineers.

17-2053 Civil Engineers, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Civil Engineers.

17-2061 Computer Hardware Engineers
Research, design, develop, and test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components. Exclude "Computer Software Engineers, Applications" (15-1031) and "Computer Software Engineers, Systems Software" (15-1032).

17-2062 Computer Hardware Engineers, Non-R&D
Design, develop, and test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components. Exclude "Computer Software Engineers, Application, Non-R&D" (15-1034) and "Computer Software Engineers, System Software, Non-R&D" (15-1036).

17-2063 Computer Hardware Engineers, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Computer Hardware Engineers. Exclude "Computer Software Engineers, Application, R&D" (15-1035) and "Computer Software Engineers, Systems Software, R&D" (15-1037).

17-2071 Electrical Engineers
Design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Exclude "Computer Hardware Engineers" (17-2061).
Illustrative Examples: Power Distribution Engineer; Illuminating Engineer; Relay Engineer

17-2072 Electronics Engineers, Except Computer
Research, design, develop, and test electronic components and systems for commercial, industrial, military, or scientific use utilizing knowledge of electronic theory and materials properties. Design electronic circuits and components for use in fields such as telecommunications, aerospace guidance and propulsion control, acoustics, or instruments and controls. Exclude "Computer Hardware Engineers" (17-2061).
Illustrative Examples: Communications Engineer; Circuit Design Engineer; Guidance and Control Systems Engineer

17-2073 Electrical Engineers, Non-R&D
Design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Exclude "Computer Hardware Engineers, Non-R&D" (17-2062).

17-2074 Electrical Engineers, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Electrical Engineers. Exclude "Computer Hardware Engineers, R&D" (17-2063).

17-2075 Electronics Engineers, Except Computer, Non-R&D
Design, develop, and test electronic components and systems for commercial, industrial, military, or scientific use utilizing knowledge of electronic theory and materials properties. Design electronic circuits and components for use in fields such as telecommunications, aerospace guidance and propulsion control, acoustics, or instruments and controls. Exclude "Computer Hardware Engineers, Non-R&D" (17-2062).

17-2076 Electronics Engineers, Except Computer, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Electronics Engineers, Except Computer. Exclude "Computer Hardware Engineers, R&D" (17-2063).

17-2081 Environmental Engineers
(Public Health Engineer) Design, plan, or perform engineering duties in the prevention, control, and remediation of environmental health hazards utilizing various engineering disciplines. Work may include waste treatment, site remediation, or pollution control technology.
Illustrative Examples: Soil Engineer; Industrial Hygiene Engineer; Pollution Control Engineer

17-2111 Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
(Industrial Health Engineer) Promote worksite or product safety by applying knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws. Include industrial product safety engineers.
Illustrative Examples: Fire-Protection Engineer; Product Safety Engineer

17-2112 Industrial Engineers
(Industrial Quality Control Engineer) Design, develop, test, and evaluate integrated systems for managing industrial production processes including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination. Exclude "Health and Safety Engineers, Except Mining Safety Engineers and Inspectors" (17-2111).
Illustrative Examples: Packaging Engineer; Time Study Engineer; Plant Engineer

17-2121 Marine Engineers and Naval Architects
Design, develop, and evaluate the operation of marine vessels, ship machinery, and related equipment, such as power supply and propulsion systems.
Illustrative Examples: Marine Architect; Port Engineer; Ship Surveyor

17-2131 Materials Engineers
(Metallurgical Engineer) Evaluate materials and develop machinery and processes to manufacture materials for use in products that must meet specialized design and performance specifications. Develop new uses for known materials. Include those working with composite materials or specializing in one type of material, such as graphite, metal and metal alloys, ceramics and glass, plastics and polymers, and naturally occurring materials. Include metallurgists and metallurgical engineers, ceramic engineers, and welding engineers.
Illustrative Example: Corrosion Engineer

17-2141 Mechanical Engineers
Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of such equipment as centralized heat, gas, water, and steam systems.
Illustrative Examples: Combustion Engineer; Plant Equipment Engineer; Hydraulic Engineer

17-2143 Mechanical Engineers, Non-R&D
Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of such equipment as centralized heat, gas, water, and steam systems.

17-2144 Mechanical Engineers, R&D
These persons spend the majority of their time performing reseach and development activities relating to their work as Mechanical Engineers.

17-2151 Mining and Geological Engineers, Including Mining Safety Engineers
Determine the location and plan the extraction of coal, metallic ores, nonmetallic minerals, and building materials, such as stone and gravel. Work involves conducting preliminary surveys of deposits or undeveloped mines and planning their development; examining deposits or mines to determine whether they can be worked at a profit; making geological and topographical surveys; evolving methods of mining best suited to character, type, and size of deposits; and supervising mining operations.
Illustrative Examples: Exploration Engineer; Mineral Engineer; Mine Equipment Design Engineer

17-2161 Nuclear Engineers
Conduct research on nuclear engineering problems or apply principles and theory of nuclear science to problems concerned with release, control, and utilization of nuclear energy and nuclear waste disposal.
Illustrative Examples: Atomic Process Engineer; Radiation Engineer; Reactor Engineer

17-2171 Petroleum Engineers
Devise methods to improve oil and gas well production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice to achieve economical and satisfactory progress.
Illustrative Examples: Drilling Engineer; Natural Gas Engineer; Oil Well Surveying Engineer

17-2199 Engineers, All Other
All engineers not listed separately.
Illustrative Examples: Optical Engineer; Salvage Engineer; Ordnance Engineer

Drafters, Engineering, and Mapping Technicians

17-3011 Architectural and Civil Drafters
Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Utilize knowledge of building materials, engineering practices, and mathematics to complete drawings.
Illustrative Example: Structural Drafter

17-3012 Electrical and Electronics Drafters
Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for manufacture, installation, and repair of electrical equipment in factories, power plants, and buildings.

17-3013 Mechanical Drafters
(Die Designer) Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.
Illustrative Example: Aeronautical Drafter

17-3019 Drafters, All Other
All drafters not listed separately
Illustrative Examples: Geological Drafter; Hull Drafter .

17-3021 Aerospace Engineering and Operations Technicians
Operate, install, calibrate, and maintain integrated computer/communications systems consoles, simulators, and other data acquisition, test, and measurement instruments and equipment to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.
Illustrative Examples: Wind Tunnel Technician; Flight Data Technician; Altitude Chamber Technician

17-3022 Civil Engineering Technicians
Apply theory and principles of civil engineering in planning, designing, and overseeing construction and maintenance of structures and facilities under the direction of engineering staff or physical scientists.
Illustrative Example: Highway Technician

17-3023 Electrical and Electronic Engineering Technicians
Apply electrical and electronic theory and related knowledge, usually under the direction of engineering staff, to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions. Exclude "Broadcast Technicians" (27-4012).
Illustrative Examples: Calibration Laboratory Technician; Semiconductor Development Technician; Instrumentation Technician

17-3024 Electro-Mechanical Technicians
Operate, test, and maintain unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.

17-3025 Environmental Engineering Technicians
Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental pollution, including waste treatment and site remediation. May assist in the development of environmental pollution remediation devices under direction of engineer.
Illustrative Examples: Air Analysis Technician; Soil Technician

17-3026 Industrial Engineering Technicians
Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May study and record time, motion, method, and speed involved in performance of production, maintenance, clerical, and other worker operations for such purposes as establishing standard production rates or improving efficiency.
Illustrative Examples: Methods Study Analyst; Quality Control Technician; Time Study Analyst

17-3027 Mechanical Engineering Technicians
Apply theory and principles of mechanical engineering to modify, develop, and test machinery and equipment under direction of engineering staff or physical scientists.
Illustrative Examples: Heat Transfer Technician; Optomechanical Technician; Tool Analyst

17-3029 Engineering Technicians, Except Drafters, All Other
All engineering technicians, except drafters, not listed separately.
Illustrative Examples: Laser Specialist; Metallurgical Technician; Material Stress Tester

17-3031 Surveying and Mapping Technicians
Perform surveying and mapping duties, usually under the direction of a surveyor, cartographer, or photogrammetrist to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of topographical maps. Exclude "Surveyors" (17-1022), "Cartographers and Photogrammetrists" (17-1021), and "Geoscientists, Except Hydrologists and Geographers" (19-2042).
Illustrative Examples: Cartographic Technician; Map Drafter; Stereo Map Plotter Operator

Life, Physical, and Social Science Occupations

Life Scientists

19-1011 Animal Scientists
Conduct research in the genetics, nutrition, reproduction, growth, and development of domestic farm animals.
Illustrative Examples: Dairy Scientist; Poultry Scientist

19-1012 Food Scientists and Technologists
Use chemistry, microbiology, engineering, and other sciences to study the principles underlying the processing and deterioration of foods; analyze food content to determine levels of vitamins, fat, sugar, and protein; discover new food sources; research ways to make processed foods safe, palatable, and healthful; and apply food science knowledge to determine best ways to process, package, preserve, store, and distribute food.

19-1013 Soil and Plant Scientists
Conduct research in breeding, physiology, production, yield, and management of crops and agricultural plants, their growth in soils, and control of pests; or study the chemical, physical, biological, and mineralogical composition of soils as they relate to plant or crop growth. May classify and map soils and investigate effects of alternative practices on soil and crop productivity.
Illustrative Examples: Agronomist; Plant Pathologist

19-1021 Biochemists and Biophysicists
Study the chemical composition and physical principles of living cells and organisms, their electrical and mechanical energy, and related phenomena. May conduct research to further understanding of the complex chemical combinations and reactions involved in metabolism, reproduction, growth, and heredity. May determine the effects of foods, drugs, serums, hormones, and other substances on tissues and vital processes of living organisms.

19-1022 Microbiologists
(Cytologist) Investigate the growth, structure, development, and other characteristics of microscopic organisms, such as bacteria, algae, or fungi. Include medical microbiologists who study the relationship between organisms and disease or the effects of antibiotics on microorganisms.
Illustrative Examples: Bacteriologist; Virologist

19-1023 Zoologists and Wildlife Biologists
(Ecologist, Herpetologist) Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife. May specialize in wildlife research and management, including the collection and analysis of biological data to determine the environmental effects of present and potential use of land and water areas.
Illustrative Example: Ornithologist

19-1029 Biological Scientists, All Other
All biological scientists not listed separately.
Illustrative Examples: Geneticist; Paleobotanist; Plant Taxonomist

19-1031 Conservation Scientists
Manage, improve, and protect natural resources to maximize their use without damaging the environment. May conduct soil surveys and develop plans to eliminate soil erosion or to protect rangelands from fire and rodent damage. May instruct farmers, agricultural production managers, or ranchers in best ways to use crop rotation, contour plowing, or terracing to conserve soil and water; in the number and kind of livestock and forage plants best suited to particular ranges; and in range and farm improvements, such as fencing and reservoirs for stock watering. Exclude "Zoologists and Wildlife Biologists" (19-1023) and "Foresters" (19-1032).
Illustrative Examples: Range Manager; Conservation Officer

19-1032 Foresters
Manage forested lands for economic, recreational, and conservation purposes. May inventory the type, amount, and location of standing timber, appraise the timber's worth, negotiate the purchase, and draw up contracts for procurement. May determine how to conserve wildlife habitats, creek beds, water quality, and soil stability, and how best to comply with environmental regulations. May devise plans for planting and growing new trees, monitor trees for healthy growth, and determine the best time for harvesting. Develop forest management plans for public and privately-owned forested lands.
Illustrative Examples: Forest Ecologist; Timber Management Specialist

19-1041 Epidemiologists
Investigate and describe the determinants and distribution of disease, disability, and other health outcomes and develop the means for prevention and control.
Illustrative Example: Malariologist

19-1042 Medical Scientists, Except Epidemiologists
(Pharmacologist) Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation or other research, production, technical writing, or related activities. Include medical scientists such as physicians, dentists, public health specialists, pharmacologists, and medical pathologists. Exclude practitioners who provide medical or dental care or dispense drugs.
Illustrative Examples: Cancer Researcher; Toxicologist

19-1099 Life Scientists, All Other
All life scientists not listed separately.

Physical Scientists

19-2011 Astronomers
Observe, research, and interpret celestial and astronomical phenomena to increase basic knowledge and apply such information to practical problems.

19-2012 Physicists
Conduct research into the phases of physical phenomena, develop theories and laws on the basis of observation and experiments, and devise methods to apply laws and theories to industry and other fields.
Illustrative Examples: Fluid Dynamicist; Rheologist; Thermodynamicist

19-2021 Atmospheric and Space Scientists
(Meteorologist) Investigate atmospheric phenomena and interpret meteorological data gathered by surface and air stations, satellites, and radar to prepare reports and forecasts for public and other uses. Include weather analysts and forecasters whose functions require the detailed knowledge of a meteorologist.
Illustrative Examples: Climatologist; Weather Forecaster

19-2031 Chemists
Conduct qualitative and quantitative chemical analyses or chemical experiments in laboratories for quality or process control or to develop new products or knowledge. Exclude "Geoscientists, Except Hydrologists and Geographers" (19-2042) and "Biochemists and Biophysicists" (19-1021).
Illustrative Examples: Inorganic Chemist; Chemical Analyst

19-2032 Materials Scientists
Research and study the structures and chemical properties of various natural and manmade materials, including metals, alloys, rubber, ceramics, semiconductors, polymers, and glass. Determine ways to strengthen or combine materials or develop new materials with new or specific properties for use in a variety of products and applications. Include glass scientists, ceramic scientists, metallurgical scientists, and polymer scientists.

19-2041 Environmental Scientists and Specialists, Including Health
Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Utilizing knowledge of various scientific disciplines may collect, synthesize, study, report, and take action based on data derived from measurements or observations of air, food, soil, water, and other sources. Exclude "Zoologists and Wildlife Biologists" (19-1023), "Conservation Scientists" (19-1031), "Forest and Conservation Technicians" (19-4093), "Fish and Game Wardens" (33-3031), and "Forest and Conservation Workers" (45-4011).
Illustrative Examples: Environmental Analyst; Water Pollution Specialist

19-2042 Geoscientists, Except Hydrologists and Geographers
(Seismologist) Study the composition, structure, and other physical aspects of the earth. May use geological, physics, and mathematics knowledge in exploration for oil, gas, minerals, or underground water; or in waste disposal, land reclamation, or other environmental problems. May study the earth's internal composition, atmospheres, oceans, and its magnetic, electrical, and gravitational forces. Include mineralogists, crystallographers, paleontologists, stratigraphers, geodesists, and seismologists.
Illustrative Examples: Oceanographer; Paleontologist

19-2043 Hydrologists
Research the distribution, circulation, and physical properties of underground and surface waters; study the form and intensity of precipitation, its rate of infiltration into the soil, movement through the earth, and its return to the ocean and atmosphere.
Illustrative Example: Hydrogeologist

19-2044 Environmental Scientists and Specialists, Including Health, Non-R&D
Study or perform investigations for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Utilizing knowledge of various scientific disciplines, may collect, synthesize, study, report, and take action based on data derived from measurements or observations of air, food, soil, water, and other sources.

19-2045 Environmental Scientists and Specialists, Including Health, R&D
These persons spend the majority of their time performing research and development activities relating to their work as Environmental Scientists and Specialists, Including Health.

19-2099 Physical Scientists, All Other
All physical scientists not listed separately.

Social Scientists and Related Workers

19-3011 Economists
Conduct research, prepare reports, or formulate plans to aid in solution of economic problems arising from production and distribution of goods and services. May collect and process economic and statistical data using econometric and sampling techniques. Exclude "Market Research Analysts" (19-3021).
Illustrative Examples: Econometrician; Economic Research Analyst; Industrial Economist

19-3021 Market Research Analysts
Research market conditions in local, regional, or national areas to determine potential sales of a product or service. May gather information on competitors, prices, sales, and methods of marketing and distribution. May use survey results to create a marketing campaign based on regional preferences and buying habits.
Illustrative Examples: Advertising Analyst; Marketing Consultant; Marketing Forecaster

19-3022 Survey Researchers
(Pollster) Design or conduct surveys. May supervise interviewers who conduct the survey in person or over the telephone. May present survey results to client. Exclude "Statisticians" (15-2041), "Economists" (19-3011), "Market Research Analysts" (19-3021), and "Interviewers, Except Eligibility and Loan" (43-4111).

19-3031 Clinical, Counseling, and School Psychologists
Diagnose and treat mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems using individual, child, family, and group therapies. May design and implement behavior modification programs.
Illustrative Examples: Vocational Psychologist; Child Psychologist

19-3032 Industrial-Organizational Psychologists
Apply principles of psychology to personnel, administration, management, sales, and marketing problems. Activities may include policy planning; employee screening, training and development; and organizational development and analysis. May work with management to reorganize the work setting to improve worker productivity.
Illustrative Example: Engineering Psychologist

19-3036 Clinical, Counseling, and School Psychologists, Non R&D
Diagnose and treat mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems using individual, child, family, and group therapies.

19-3037 Clinical, Counseling, and School Psychologists, R&D
These persons spend the majority of their time conducting psychological research.

19-3039 Psychologists, All Other
All psychologists not listed separately.
Illustrative Examples: Social Psychologist; Psychometrist

19-3041 Sociologists
Study human society and social behavior by examining the groups and social institutions that people form, as well as various social, religious, political, and business organizations. May study the behavior and interaction of groups, trace their origin and growth, and analyze the influence of group activities on individual members.
Illustrative Examples: Criminologist; Penologist; Social Welfare Research Worker

19-3051 Urban and Regional Planners
Develop comprehensive plans and programs for use of land and physical facilities of local jurisdictions, such as towns, cities, counties, and metropolitan areas.
Illustrative Example: City Planner

19-3091 Anthropologists and Archeologists
Study the origin, development, and behavior of humans. May study the way of life, language, or physical characteristics of existing people in various parts of the world. May engage in systematic recovery and examination of material evidence, such as tools or pottery remaining from past human cultures, in order to determine the history, customs, and living habits of earlier civilizations.
Illustrative Example: Political Anthropologist

19-3092 Geographers
Study nature and use of areas of earth's surface, relating and interpreting interactions of physical and cultural phenomena. Conduct research on physical aspects of a region, including land forms, climates, soils, plants and animals, and conduct research on the spatial implications of human activities within a given area, including social characteristics, economic activities, and political organization, as well as researching interdependence between regions at scales ranging from local to global.

19-3093 Historians
Research, analyze, record, and interpret the past as recorded in sources, such as government and institutional records, newspapers and other periodicals, photographs, interviews, films, and unpublished manuscripts, such as personal diaries and letters.
Illustrative Examples: Genealogist; Historical Society Director

19-3094 Political Scientists
Study the origin, development, and operation of political systems. Research a wide range of subjects, such as relations between the United States and foreign countries, the beliefs and institutions of foreign nations, or the politics of small towns or a major metropolis. May study topics, such as public opinion, political decision making, and ideology. May analyze the structure and operation of governments, as well as various political entities. May conduct public opinion surveys, analyze election results, or analyze public documents.
Illustrative Examples: Political Analyst; Political Consultant

19-3099 Social Scientists and Related Workers, All Other
All social scientists and related workers not listed separately.
Illustrative Examples: Ethnologist; Linguist; Philologist

Life, Physical, and Social Science Technicians

19-4011 Agricultural and Food Science Technicians
Work with agricultural scientists in food, fiber, and animal research, production, and processing; assist with animal breeding and nutrition work; under supervision, conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects. Include technicians who assist food scientists or food technologists in the research, development, production technology, quality control, packaging, processing, and use of foods.
Illustrative Examples: Inseminator; Feed Research Technician; Dairy Technologist

19-4021 Biological Technicians
Assist biological and medical scientists in laboratories. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.
Illustrative Examples: Biotechnologist; Wildlife Technician; Specimen Technician

19-4031 Chemical Technicians
(Assayer) Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for purposes, such as research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.
Illustrative Examples: Fiber Analyst; Paint Tester

19-4041 Geological and Petroleum Technicians
Assist scientists in the use of electrical, sonic, or nuclear measuring instruments in both laboratory and production activities to obtain data indicating potential sources of metallic ore, gas, or petroleum. Analyze mud and drill cuttings. Chart pressure, temperature, and other characteristics of wells or bore holes. Investigate and collect information leading to the possible discovery of new oil fields.
Illustrative Examples: Field Scout; Crude Tester; Seismic Observer

19-4051 Nuclear Technicians
Assist scientists in both laboratory and production activities by performing technical tasks involving nuclear physics, primarily in operation, maintenance, production, and quality control support activities.
Illustrative Examples: Accelerator Operator; Radiation Monitor

19-4061 Social Science Research Assistants
Assist social scientists in laboratory, survey, and other social research. May perform publication activities, laboratory analysis, quality control, or data management. Normally these individuals work under the direct supervision of a social scientist and assist in those activities which are more routine. Exclude "Graduate Teaching Assistants" (25-1191) who both teach and do research.
Illustrative Examples: City Planning Aide; Economic Research Assistant; Historian Research Assistant

19-4091 Environmental Science and Protection Technicians, Including Health
Performs laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health. Under direction of an environmental scientist or specialist, may collect samples of gases, soil, water, and other materials for testing and take corrective actions as assigned.
Illustrative Example: Pollution Control Technician

19-4092 Forensic Science Technicians
Collect, identify, classify, and analyze physical evidence related to criminal investigations. Perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation. May testify as expert witnesses on evidence or crime laboratory techniques. May serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry.
Illustrative Examples: Ballistic Expert; Fingerprint Classifier

19-4093 Forest and Conservation Technicians
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 scientists in managing, improving, and protecting rangelands and wildlife habitats, and help provide technical assistance regarding the conservation of soil, water, and related natural resources.
Illustrative Examples: Grazing Examiner; Soil Tester; Tree Warden

19-4099 Life, Physical, and Social Science Technicians, All Other
All life, physical, and social science technicians not listed separately.
Illustrative Examples: Laser Technician; Radiographer; Meteorological Aide

Community and Social Services Occupations

Counselors, Social Workers, and Other Community and Social Service Specialists

21-1011 Substance Abuse and Behavioral Disorder Counselors
Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs. Exclude "Social Workers" (21-1021 through 21-1029), "Psychologists" (19-3031 through 19-3039), and "Mental Health Counselors" (21-1014) providing these services.
Illustrative Examples: Addiction Counselor; Chemical Dependency Counselor; Drug Counselor

21-1012 Educational, Vocational, and School Counselors
(Guidance Counselor) Counsel individuals and provide group educational and vocational guidance services.
Illustrative Examples: Curriculum Counselor; Educational Adviser

21-1013 Marriage and Family Therapists
(Marriage Counselor) Diagnose and treat mental and emotional disorders, whether cognitive, affective, or behavioral, within the context of marriage and family systems. Apply psychotherapeutic and family systems theories and techniques in the delivery of professional services to individuals, couples, and families for the purpose of treating such diagnosed nervous and mental disorders. Exclude "Social Workers" (21-1021 through 21-1029) and "Psychologists" of all types (19-3031 through 19-3039).
Illustrative Example: Family Counselor

21-1014 Mental Health Counselors
Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental health. May help individuals deal with addictions and substance abuse; family, parenting, and marital problems; suicide; stress management; problems with self-esteem; and issues associated with aging and mental and emotional health. Exclude "Social Workers" (21-1021 through 21-1029), "Psychiatrists" (29-1066), and "Psychologists" (19-3031 through 19-3039).

21-1015 Rehabilitation Counselors
Counsel individuals to maximize the independence and employability of persons coping with personal, social, and vocational difficulties that result from birth defects, illness, disease, accidents, or the stress of daily life. Coordinate activities for residents of care and treatment facilities. Assess client needs and design and implement rehabilitation programs that may include personal and vocational counseling, training, and job placement.
Illustrative Examples: Coordinator of Rehabilitation Services; Homemaking Rehabilitation Consultant

21-1019 Counselors, All Other
All counselors not listed separately.
Illustrative Examples: Mental Hygienist; Race Relations Adviser

21-1021 Child, Family, and School Social Workers
(Foster Care Worker) Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist single parents, arrange adoptions, and find foster homes for abandoned or abused children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers on how to deal with problem children.
Illustrative Examples: Adoption Agent; Child Abuse Worker

21-1022 Medical and Public Health Social Workers
Provide persons, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses, such as Alzheimer's, cancer, or AIDS. Services include advising family care givers, providing patient education and counseling, and making necessary referrals for other social services.
Illustrative Examples: Bereavement Counselor; Hospice Social Worker; Medical Caseworker

21-1023 Mental Health and Substance Abuse Social Workers
Assess and treat individuals with mental, emotional, or substance abuse problems, including abuse of alcohol, tobacco, and/or other drugs. Activities may include individual and group therapy, crisis intervention, case management, client advocacy, prevention, and education.
Illustrative Examples: Community Mental Health Worker; Psychiatric Social Worker

21-1029 Social Workers, All Other
All social workers not listed separately.
Illustrative Examples: Case Worker; Case Supervisor; Welfare Investigator

21-1091 Health Educators
(Public Health Analyst) Promote, maintain, and improve individual and community health by assisting individuals and communities to adopt healthy behaviors. Collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies and environments. May also serve as a resource to assist individuals, other professionals, or the community, and may administer fiscal resources for health education programs.
Illustrative Examples: Public Health Advisor; Public Health Representative

21-1092 Probation Officers and Correctional Treatment Specialists
Provide social services to assist in rehabilitation of law offenders in custody or on probation or parole. Make recommendations for actions involving formulation of rehabilitation plan and treatment of offender, including conditional release and education and employment stipulations.
Illustrative Examples: Attendance Officer; Parole Officer

21-1093 Social and Human Service Assistants
Assist professionals from a wide variety of fields, such as psychology, rehabilitation, or social work, to provide client services, as well as support for families. May assist clients in identifying available benefits and social and community services and help clients obtain them. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or adult daycare. Exclude "Rehabilitation Counselors" (21-1015), "Personal and Home Care Aides" (39-9021), "Eligibility Interviewers, Government Programs" (43-4061), and "Psychiatric Technicians" (29-2053).
Illustrative Examples: Case Aide; Home Visitor; Human Services Worker

21-1099 Community and Social Service Specialists, All Other
All community and social service specialists not listed separately.
Illustrative Examples: Community Organization Worker; Veteran's Service Officer

Religious Workers

21-2011 Clergy
Conduct religious worship and perform other spiritual functions associated with beliefs and practices of religious faith or denomination. Provide spiritual and moral guidance and assistance to members.
Illustrative Examples: Bishop; Parish Priest; Rabbi

21-2021 Directors, Religious Activities and Education
Direct and coordinate activities of a denominational group to meet religious needs of students. Plan, direct, or coordinate church school programs designed to promote religious education among church membership. May provide counseling and guidance relative to marital, health, financial, and religious problems.
Illustrative Examples: Director of Religious Education; Minister of Education; Youth Director

21-2099 Religious Workers, All Other
All religious workers not listed separately.
Illustrative Examples: Religious Healer; Ecclesiastical Worker; Missionary

Legal Occupations

Lawyers, Judges, and Related Workers

23-1011 Lawyers
(District Attorney, Public Defender) Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, and manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in many areas of law.
Illustrative Examples: Attorney; Real Estate Attorney; Corporate Counsel

23-1021 Administrative Law Judges, Adjudicators, and Hearing Officers
Conduct hearings to decide or recommend decisions on claims concerning government programs or other government-related matters and prepare decisions. Determine penalties or the existence and the amount of liability, or recommend the acceptance or rejection of claims, or compromise settlements.
Illustrative Example: Traffic Court Referee

23-1022 Arbitrators, Mediators, and Conciliators
Facilitate negotiation and conflict resolution through dialogue. Resolve conflicts outside of the court system by mutual consent of parties involved.

23-1023 Judges, Magistrate Judges, and Magistrates
Arbitrate, advise, adjudicate, or administer justice in a court of law. May sentence defendant in criminal cases according to government statutes. May determine liability of defendant in civil cases. May issue marriage licenses and perform wedding ceremonies.
Illustrative Examples: Circuit Court Judge; Jurist; Justice

Legal Support Workers

23-2011 Paralegals and Legal Assistants
Assist lawyers by researching legal precedent, investigating facts, or preparing legal documents. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.
Illustrative Examples: Legal Assistant; Legal Investigator

23-2091 Court Reporters
(Stenocaptioner) Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Include stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.
Illustrative Examples: Court Transcriber; Mask Reporter

23-2092 Law Clerks
Assist lawyers or judges by researching or preparing legal documents. May meet with clients or assist lawyers and judges in court. Exclude "Lawyers" (23-1011) and "Paralegals and Legal Assistants" (23-2011).
Illustrative Example: Legal Clerk

23-2093 Title Examiners, Abstractors, and Searchers
Search real estate records, examine titles, or summarize pertinent legal or insurance details for a variety of purposes. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching public and private records for law firms, real estate agencies, or title insurance companies.
Illustrative Examples: Abstract Clerk; Escrow Officer; Lien Searcher

23-2099 Legal Support Workers, All Other
All legal support workers not listed separately.
Illustrative Examples: Brief Writer; Legislative Aide; Patent Examiner

Education, Training, and Library Occupations

Postsecondary Teachers

25-1011 Business Teachers, Postsecondary
Teach courses in business administration and management, such as accounting, finance, human resources, labor relations, marketing, and operations research. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Accounting Teacher; Marketing Teacher; Shorthand Teacher

25-1021 Computer Science Teachers, Postsecondary
Teach courses in computer science. May specialize in a field of computer science, such as the design and function of computers or operations and research analysis. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1022 Mathematical Science Teachers, Postsecondary
Teach courses pertaining to mathematical concepts, statistics, and actuarial science and to the application of original and standardized mathematical techniques in solving specific problems and situations. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Actuarial Science Teacher; Calculus Teacher; Geometry Teacher

25-1031 Architecture Teachers, Postsecondary
Teach courses in architecture and architectural design, such as architectural environmental design, interior architecture/design, and landscape architecture. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Example: Landscape Architecture Teacher

25-1032 Engineering Teachers, Postsecondary
Teach courses pertaining to the application of physical laws and principles of engineering for the development of machines, materials, instruments, processes, and services. Include teachers of subjects, such as chemical, civil, electrical, industrial, mechanical, mineral, and petroleum engineering. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research. Exclude "Computer Science Teachers, Postsecondary" (25-1021).
Illustrative Examples: Aeronautics Engineering Teacher; Civil Engineering Teacher; Electrical Engineering Teacher

25-1041 Agricultural Sciences Teachers, Postsecondary
Teach courses in the agricultural sciences. Include teachers of agronomy, dairy sciences, fisheries management, horticultural sciences, poultry sciences, range management, and agricultural soil conservation. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Dairy Science Teacher; Farm Management Teacher; Agricultural Soil Conservation Teacher

25-1042 Biological Science Teachers, Postsecondary
Teach courses in biological sciences. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Bacteriology Teacher; Biochemistry Teacher; Genetics Teacher

25-1043 Forestry and Conservation Science Teachers, Postsecondary
Teach courses in environmental and conservation science. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research. Exclude "Agricultural Science Teachers" (25-1041).
Illustrative Examples: Forest Management Teacher; Forest Pathology Teacher
25-1051 Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary
Teach courses in the physical sciences, except chemistry and physics. Include both teachers primarily engaged in teaching, and those who do a combination of both teaching and research.
Illustrative Examples: Climatology Teacher; Geology Teacher; Oceanography Teacher

25-1052 Chemistry Teachers, Postsecondary
Teach courses pertaining to the chemical and physical properties and compositional changes of substances. Work may include instruction in the methods of qualitative and quantitative chemical analysis. Include both teachers primarily engaged in teaching, and those who do a combination of both teaching and research. Exclude "Biological Science Teachers, Postsecondary" (25-1042) who teach biochemistry.
Illustrative Examples: Food Technology Teacher; Pharmacognosy Teacher

25-1053 Environmental Science Teachers, Postsecondary
Teach courses in environmental science. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1054 Physics Teachers, Postsecondary
Teach courses pertaining to the laws of matter and energy. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Aerodynamics Teacher; Ballistics Teacher; Thermodynamics Teacher

25-1061 Anthropology and Archeology Teachers, Postsecondary
Teach courses in anthropology or archeology. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Example: Paleology Teacher

25-1062 Area, Ethnic, and Cultural Studies Teachers, Postsecondary
Teach courses pertaining to the culture and development of an area (e.g., Latin America), an ethnic group, or any other group (e.g., women's studies, urban affairs). Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Example: Ethnology Teacher

25-1063 Economics Teachers, Postsecondary
Teach courses in economics. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Agricultural Economics Teacher; Industrial Economics Teacher

25-1064 Geography Teachers, Postsecondary
Teach courses in geography. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Example: Cartography Teacher

25-1065 Political Science Teachers, Postsecondary
Teach courses in political science, international affairs, and international relations. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Government Teacher; International Relations Teacher; Public Policy Teacher

25-1066 Psychology Teachers, Postsecondary
Teach courses in psychology, such as child, clinical, and developmental psychology, and psychological counseling. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Child Development Teacher; Human Relations Teacher; Applied Psychology Teacher

25-1067 Sociology Teachers, Postsecondary
Teach courses in sociology. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1069 Social Sciences Teachers, Postsecondary, All Other
All postsecondary social sciences teachers not listed separately.
Illustrative Examples: Urban Planning Teacher; Labor Relations Teacher; Survey Research Teacher

25-1071 Health Specialties Teachers, Postsecondary
Teach courses in health specialties, such as veterinary medicine, dentistry, pharmacy, therapy, laboratory technology, and public health. Exclude "Nursing Instructors and Teachers, Postsecondary" (25-1072) and "Biological Science Teachers, Postsecondary" (25-1042) who teach medical science.
Illustrative Examples: Pharmacology Teacher; Dentistry Teacher; Nutrition Teacher

25-1072 Nursing Instructors and Teachers, Postsecondary
Demonstrate and teach patient care in classroom and clinical units to nursing students. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Registered Nursing Instructor; Practical Nursing Instructor; Nurses Aide Instructor

25-1081 Education Teachers, Postsecondary
Teach courses pertaining to education, such as counseling, curriculum, guidance, instruction, teacher education, and teaching English as a second language. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1082 Library Science Teachers, Postsecondary
Teach courses in library science. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Example: Teacher of Medical Record Librarians

25-1111 Criminal Justice and Law Enforcement Teachers, Postsecondary
Teach courses in criminal justice, corrections, and law enforcement administration. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Criminology Teacher; Penology Teacher

25-1112 Law Teachers, Postsecondary
Teach courses in law. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1113 Social Work Teachers, Postsecondary
Teach courses in social work. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1121 Art, Drama, and Music Teachers, Postsecondary
Teach courses in drama, music, and the arts including fine and applied art, such as painting and sculpture, or design and crafts. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Photography Teacher; Piano Teacher; Music Director

25-1122 Communications Teachers, Postsecondary
Teach courses in communications, such as organizational communications, public relations, radio/television broadcasting, and journalism. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Journalism Teacher; Public Speaking Teacher

25-1123 English Language and Literature Teachers, Postsecondary
Teach courses in English language and literature, including linguistics and comparative literature. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Classics Teacher; Etymology Teacher; Creative Writing Teacher

25-1124 Foreign Language and Literature Teachers, Postsecondary
Teach courses in foreign (i.e., other than English) languages and literature. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Arabic Teacher; Russian Teacher; Spanish Teacher

25-1125 History Teachers, Postsecondary
Teach courses in human history and historiography. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

25-1126 Philosophy and Religion Teachers, Postsecondary
Teach courses in philosophy, religion, and theology. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Divinity Teacher; Metaphysics Teacher; Theology Teacher

25-1191 Graduate Teaching Assistants
Assist department chairperson, faculty members, or other professional staff members in college or university by performing teaching or teaching-related duties, such as teaching lower level courses, developing teaching materials, preparing and giving examinations, and grading examinations or papers. Graduate assistants must be enrolled in a graduate school program. Graduate assistants who primarily perform non-teaching duties, such as laboratory research, should be reported in the occupational category related to the work performed.

25-1192 Home Economics Teachers, Postsecondary
Teach courses in child care, family relations, finance, nutrition, and related subjects as pertaining to home management. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Food and Nutrition Teacher; Sewing Teacher

25-1193 Recreation and Fitness Studies Teachers, Postsecondary
Teach courses pertaining to recreation, leisure, and fitness studies, including exercise physiology and facilities management. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.
Illustrative Examples: Swimming Teacher; Leisure Studies Instructor

25-1194 Vocational Education Teachers, Postsecondary
(Adult Education Teacher) Teach or instruct vocational or occupational subjects at the postsecondary level (but at less than the baccalaureate) to students who have graduated or left high school. Include correspondence school instructors; industrial, commercial and government training instructors; and adult education teachers and instructors who prepare persons to operate industrial machinery and equipment and transportation and communications equipment. Teaching may take place in public or private schools whose primary business is education or in a school associated with an organization whose primary business is other than education.
Illustrative Examples: Real Estate Instructor; Auto Mechanics Teacher; Barbering Teacher

25-1199 Postsecondary Teachers, All Other
All postsecondary teachers not listed separately.
Illustrative Examples: Interior Design Teacher; Military Science Teacher

Primary, Secondary, and Special Education School Teachers

25-2011 Preschool Teachers, Except Special Education
(Day Care Teacher, Nursery School Teacher) Instruct children (normally up to 5 years of age) in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. May be required to hold State certification. Exclude "Child Care Workers" (39-9011) and "Special Education Teachers" (25-2041 through 25-2043).
Illustrative Examples: Head Start Teacher; Childhood Development Teacher

25-2012 Kindergarten Teachers, Except Special Education
Teach elemental natural and social science, personal hygiene, music, art, and literature to children from 4 to 6 years old. Promote physical, mental, and social development. May be required to hold State certification. Exclude "Special Education Teachers" (25-2041 through 25-2043).

25-2021 Elementary School Teachers, Except Special Education
Teach pupils in public or private schools at the elementary level basic academic, social, and other formative skills. Exclude "Special Education Teachers" (25-2041 through 25-2043).

25-2022 Middle School Teachers, Except Special and Vocational Education
(Junior High School Teacher) Teach students in public or private schools in one or more subjects at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable State laws and regulations. Exclude "Middle School Vocational Education Teachers" (25-2023) and "Special Education Teachers" (25-2041 through 25-2043).

25-2023 Vocational Education Teachers, Middle School
Teach or instruct vocational or occupational subjects at the middle school level. Exclude "Special Education Teachers" (25-2041 through 25-2043)

25-2031 Secondary School Teachers, Except Special and Vocational Education
(High School Teacher) Instruct students in secondary public or private schools in one or more subjects at the secondary level, such as English, mathematics, or social studies. May be designated according to subject matter specialty, such as typing instructors, commercial teachers, or English teachers. Exclude "Vocational Education Secondary School Teachers" (25-2032) and "Special Education Teachers" (25-2041 through 25-2043).

25-2032 Vocational Education Teachers, Secondary School
Teach or instruct vocational or occupational subjects at the secondary school level.

25-2041 Special Education Teachers, Preschool, Kindergarten, and Elementary School
Teach elementary and preschool school subjects to educationally and physically handicapped students. Include teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired.

25-2042 Special Education Teachers, Middle School
Teach middle school subjects to educationally and physically handicapped students. Include teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired.

25-2043 Special Education Teachers, Secondary School
Teach secondary school subjects to educationally and physically handicapped students. Include teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired.

Other Teachers and Instructors

25-3011 Adult Literacy, Remedial Education, and GED Teachers and Instructors
Teach or instruct out-of-school youths and adults in remedial education classes, preparatory classes for the General Educational Development test, literacy, or English as a Second Language. Teaching may or may not take place in a traditional educational institution.
Illustrative Example: Adult Education Teacher

25-3021 Self-Enrichment Education Teachers
Teach or instruct courses other than those that normally lead to an occupational objective or degree. Courses may include self-improvement, nonvocational, and nonacademic subjects. Teaching may or may not take place in a traditional educational institution.
Illustrative Examples: Art Teacher; Flying Teacher; Citizenship Teacher

25-3099 Teachers and Instructors, All Other
All teachers and instructors not listed separately.
Illustrative Examples: Consumer Education Specialist; Lecturer; Private Tutor

Librarians, Curators, and Archivists

25-4011 Archivists
Appraise, edit, and direct safekeeping of permanent records and historically valuable documents. Participate in research activities based on archival materials.
Illustrative Example: Docent Coordinator

25-4012 Curators
Administer affairs of museum and conduct research programs. Direct instructional, research, and public service activities of institution.
Illustrative Examples: Art Gallery Director; Museum Director

25-4013 Museum Technicians and Conservators
Prepare specimens, such as fossils, skeletal parts, lace, and textiles, for museum collection and exhibits. May restore documents or install, arrange, and exhibit materials.
Illustrative Example: Museum Registrar

25-4021 Librarians
Administer libraries and perform related library services. Work in a variety of settings, including public libraries, schools, colleges and universities, museums, corporations, government agencies, law firms, non-profit organizations, and healthcare providers. Tasks may include selecting, acquiring, cataloguing, classifying, circulating, and maintaining library materials; and furnishing reference, bibliographical, and readers' advisory services. May perform in-depth, strategic research, and synthesize, analyze, edit, and filter information. May set up or work with databases and information systems to catalogue and access information.
Illustrative Examples: School Library Media Specialist; Circulation Manager

25-4031 Library Technicians
(Assistant Librarian, Bookmobile Driver) Assist librarians by helping readers in the use of library catalogs, databases, and indexes to locate books and other materials; and by answering questions that require only brief consultation of standard reference. Compile records; sort and shelve books; remove or repair damaged books; register patrons; check materials in and out of the circulation process. Replace materials in shelving area (stacks) or files. Include bookmobile drivers who operate bookmobiles or light trucks that pull trailers to specific locations on a predetermined schedule and assist with providing services in mobile libraries.

Other Education, Training, and Library Occupations

25-9011 Audio-Visual Collections Specialists
Prepare, plan, and operate audio-visual teaching aids for use in education. May record, catalogue, and file audio-visual materials.

25-9021 Farm and Home Management Advisors
(Agricultural Extension Agent) Advise, instruct, and assist individuals and families engaged in agriculture, agricultural-related processes, or home economics activities. Demonstrate procedures and apply research findings to solve problems; instruct and train in product development, sales, and the utilization of machinery and equipment to promote general welfare. Include county agricultural agents, feed and farm management advisers, home economists, and extension service advisors.
Illustrative Examples: Feed Adviser; Home Economic Extension Worker

25-9031 Instructional Coordinators
(Curriculum Specialist) Develop instructional material, coordinate educational content, and incorporate current technology in specialized fields that provide guidelines to educators and instructors for developing curricula and conducting courses. Include educational consultants and specialists, and instructional material directors.
Illustrative Examples: Director of Instructional Materials; Educational Consultant

25-9041 Teacher Assistants
(Teacher Aide) Perform duties that are instructional in nature or deliver direct services to students or parents. Serve in a position for which a teacher or another professional has ultimate responsibility for the design and implementation of educational programs and services.
Illustrative Examples: Examination Proctor; Paper Grader; Paraprofessional Teacher Aide

25-9099 Education, Training, and Library Workers, All Other
All education, training, and library workers not listed separately.

Arts, Design, Entertainment, Sports, and Media Occupations

Art and Design Workers

27-1011 Art Directors
Formulate design concepts and presentation approaches, and direct workers engaged in art work, layout design, and copy writing for visual communications media, such as magazines, books, newspapers, and packaging.

27-1012 Craft Artists
Create or reproduce hand-made objects for sale and exhibition using a variety of techniques, such as welding, weaving, pottery, and needlecraft.
Illustrative Examples: Architectural Modeler; Furniture Reproducer; Ivory Carver

27-1013 Fine Artists, Including Painters, Sculptors, and Illustrators
Create original artwork using any of a wide variety of mediums and techniques, such as painting and sculpture.
Illustrative Examples: Art Restorer; Statue Maker

27-1014 Multi-Media Artists and Animators
Create special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in products or creations, such as computer games, movies, music videos, and commercials.
Illustrative Examples: Computer Artist; Computer Graphics Illustrator; Special Effects Specialist

27-1019 Artists and Related Workers, All Other
All artists and related workers not listed separately.
Illustrative Examples: Art Appraiser; Calligrapher; Inker and Opaquer

27-1021 Commercial and Industrial Designers
Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.
Illustrative Examples: Body Stylist; Color Consultant; Jewelry Designer

27-1022 Fashion Designers
Design clothing and accessories. Create original garments or design garments that follow well established fashion trends. May develop the line of color and kinds of materials.
Illustrative Examples: Costume Designer; Custom Furrier; Stylist

27-1023 Floral Designers
(Florist) Design, cut, and arrange live, dried, or artificial flowers and foliage.
Illustrative Examples: Corsage Maker; Flower Arranger

27-1024 Graphic Designers
(Graphic Artist) Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.
Illustrative Examples: Catalogue Illustrator; Layout Artist

27-1025 Interior Designers
Plan, design, and furnish interiors of residential, commercial, or industrial buildings. Formulate design which is practical, aesthetic, and conducive to intended purposes, such as raising productivity, selling merchandise, or improving life style. May specialize in a particular field, style, or phase of interior design. Exclude "Merchandise Displayers and Window Trimmers" (27-1026).
Illustrative Examples: Decorator; Furniture Arranger; Home Lighting Adviser

27-1026 Merchandise Displayers and Window Trimmers
Plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions.
Illustrative Examples: Mannequin Decorator; Display Artist; Model Dresser

27-1027 Set and Exhibit Designers
Design special exhibits and movie, television, and theater sets. May study scripts, confer with directors, and conduct research to determine appropriate architectural styles.
Illustrative Examples: Set Decorator; Stage Scenery Designer

27-1029 Designers, All Other
All designers not listed separately.
Illustrative Examples: Copyist; Frame Stylist

Entertainers and Performers, Sports and Related Workers

27-2011 Actors
Play parts in stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Interpret serious or comic role by speech, gesture, and body movement to entertain or inform audience. May dance and sing.
Illustrative Examples: Elocutionist; Extra; Dramatic Reader

27-2012 Producers and Directors
(Stage Manager) Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of guests, set design, sound, special effects, and choreography.
Illustrative Examples: Independent Film Maker; Program Arranger

27-2021 Athletes and Sports Competitors
Compete in athletic events.
Illustrative Examples: Ball Player; Jockey; Racing Car Driver

27-2022 Coaches and Scouts
Instruct or coach groups or individuals in the fundamentals of sports. Demonstrate techniques and methods of participation. May evaluate athletes' strengths and weaknesses as possible recruits or to improve the athletes' technique to prepare them for competition. Those required to hold teaching degrees should be reported in the appropriate teaching category. Exclude "Athletic Trainers" (29-9091).
Illustrative Examples: Boxing Trainer; Horse Trainer; Baseball Club Manager

27-2023 Umpires, Referees, and Other Sports Officials
Officiate at competitive athletic or sporting events. Detect infractions of rules and decide penalties according to established regulations. Include all sporting officials, referees, and competition judges.
Illustrative Examples: Handicapper; Paddock Judge; Athletic Events Scorer

27-2031 Dancers
Perform dances. May also sing or act.

27-2032 Choreographers
Create and teach dance. May direct and stage presentations.
Illustrative Example: Dance Director

27-2041 Music Directors and Composers
Conduct, direct, plan, and lead instrumental or vocal performances by musical groups, such as orchestras, choirs, and glee clubs. Include arrangers, composers, choral directors, and orchestrators.
Illustrative Examples: Choirmaster; Orchestra Conductor

27-2042 Musicians and Singers
Play one or more musical instruments or entertain by singing songs in recital, in accompaniment, or as a member of an orchestra, band, or other musical group. Musical performers may entertain on-stage, radio, TV, film, video, or record in studios. Exclude "Dancers" (27-2031).
Illustrative Examples: Cantor; Church Organist; Instrumentalist

27-2099 Entertainers and Performers, Sports and Related Workers, All Other
All entertainers and performers, sports and related workers not listed separately
Illustrative Examples: Circus Performer; Comedian; Magician.

Media and Communication Workers

27-3011 Radio and Television Announcers
Talk on radio or television. May interview guests, act as master of ceremonies, read news flashes, identify station by giving call letters, or announce song title and artist.
Illustrative Example: Broadcaster

27-3012 Public Address System and Other Announcers
Make announcements over loud speaker at sporting or other public events. May act as master of ceremonies or disc jockey at weddings, parties, clubs, or other gathering places.
Illustrative Examples: Ringmaster; Train Caller

27-3021 Broadcast News Analysts
Analyze, interpret, and broadcast news received from various sources.
Illustrative Examples: News Anchor; Commentator; Newscaster

27-3022 Reporters and Correspondents
Collect and analyze facts about newsworthy events by interview, investigation, or observation. Report and write stories for newspaper, news magazine, radio, or television. Exclude "Broadcast News Analysts" (27-3021).
Illustrative Examples: Critic; Foreign Correspondent

27-3031 Public Relations Specialists
(Publicist) Engage in promoting or creating good will for individuals, groups, or organizations by writing or selecting favorable publicity material and releasing it through various communications media. May prepare and arrange displays, and make speeches.
Illustrative Examples: Lobbyist; Press Secretary

27-3041 Editors
(Technical Editor) Perform variety of editorial duties, such as laying out, indexing, and revising content of written materials, in preparation for final publication. Include technical editors.
Illustrative Examples: Copy Editor; Censor; Reviewer

27-3042 Technical Writers
Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.
Illustrative Examples: Documentation Writer; Assembly Instructions Writer; Specifications Writer

27-3043 Writers and Authors
Originate and prepare written material, such as scripts, stories, advertisements, and other material. Exclude "Public Relations Specialists" (27-3031) and "Technical Writers" (27-3042).
Illustrative Examples: Crossword Puzzle Maker; Copy Writer; Playwright

27-3091 Interpreters and Translators
Translate or interpret written, oral, or sign language text into another language for others.
Illustrative Examples: Braille Translator; Deaf Interpreter; Language Translator

27-3099 Media and Communication Workers, All Other
All media and communication workers not listed separately.
Illustrative Examples: Graphologist; Stage Technician

Media and Communication Equipment Workers

27-4011 Audio and Video Equipment Technicians
Set up or set up and operate audio and video equipment including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for concerts, sports events, meetings and conventions, presentations, and news conferences. May also set up and operate associated spotlights and other custom lighting systems. Exclude "Sound Engineering Technicians" (27-4014).
Illustrative Examples: Video Control Operator; Audio Visual Production Specialist

27-4012 Broadcast Technicians
(Control Room Technician) Set up, operate, and maintain the electronic equipment used to transmit radio and television programs. Control audio equipment to regulate volume level and quality of sound during radio and television broadcasts. Operate radio transmitter to broadcast radio and television programs.
Illustrative Example: Audio Engineer

27-4013 Radio Operators
Receive and transmit communications using radiotelegraph or radiotelephone equipment in accordance with government regulations. May repair equipment.
Illustrative Example: Radio Officer

27-4014 Sound Engineering Technicians
(Sound Editor) Operate machines and equipment to record, synchronize, mix, or reproduce music, voices, or sound effects in sporting arenas, theater productions, recording studios, or movie and video productions.
Illustrative Examples: Film Recordist; Sound Effects Person

27-4021 Photographers
Photograph persons, subjects, merchandise, or other commercial products. May develop negatives and produce finished prints. Include scientific photographers, aerial photographers, and photojournalists.
Illustrative Example: Camera Operator

27-4031 Camera Operators, Television, Video, and Motion Picture
Operate television, video, or motion picture camera to photograph images or scenes for various purposes, such as TV broadcasts, advertising, video production, or motion pictures.
Illustrative Example: Cinematographer

27-4032 Film and Video Editors
Edit motion picture soundtracks, film, and video.
Illustrative Examples: Cue Selector; Video Tape Duplicator

27-4099 Media and Communication Equipment Workers, All Other
All media and communication equipment workers not listed separately.
Illustrative Examples: Radar Operator; Light Technician

Healthcare Practitioner and Technical Occupations

Health Diagnosing and Treating Practitioners

29-1011 Chiropractors
Adjust spinal column and other articulations of the body to correct abnormalities of the human body believed to be caused by interference with the nervous system. Examine patient to determine nature and extent of disorder. Manipulate spine or other involved area. May utilize supplementary measures, such as exercise, rest, water, light, heat, and nutritional therapy.

29-1021 Dentists, General
Diagnose and treat diseases, injuries, and malformations of teeth and gums and related oral structures. May treat diseases of nerve, pulp, and other dental tissues affecting vitality of teeth. Exclude "Prosthodontists" (29-1024), "Orthodontists" (29-1023), "Oral and Maxillofacial Surgeons" (29-1022) and "Dentists, all other specialists" (29-1029).

29-1022 Oral and Maxillofacial Surgeons
Perform surgery on mouth, jaws, and related head and neck structure to execute difficult and multiple extractions of teeth, to remove tumors and other abnormal growths, to correct abnormal jaw relations by mandibular or maxillary revision, to prepare mouth for insertion of dental prosthesis, or to treat fractured jaws.
Illustrative Example: Dental Surgeon

29-1023 Orthodontists
Examine, diagnose, and treat dental malocclusions and oral cavity anomalies. Design and fabricate appliances to realign teeth and jaws to produce and maintain normal function and to improve appearance.

29-1024 Prosthodontists
Construct oral prostheses to replace missing teeth and other oral structures to correct natural and acquired deformation of mouth and jaws, to restore and maintain oral function, such as chewing and speaking, and to improve appearance.

29-1029 Dentists, All Other Specialists
All dentists not listed separately.
Illustrative Examples: Endodontist; Periodontist; Oral Pathologist

29-1031 Dietitians and Nutritionists
Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease. May supervise activities of a department providing quantity food services, counsel individuals, or conduct nutritional research.
Illustrative Examples: Public Health Dietitian; Nutrition Director; Research Dietitian

29-1041 Optometrists
Diagnose, manage, and treat conditions and diseases of the human eye and visual system. Examine eyes and visual system, diagnose problems or impairments, prescribe corrective lenses, and provide treatment. May prescribe therapeutic drugs to treat specific eye conditions.
Illustrative Example: Doctor of Optometry

29-1051 Pharmacists
Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. May advise physicians and other health practitioners on the selection, dosage, interactions, and side effects of medications.
Illustrative Examples: Apothecary; Druggist; Industrial Pharmacist

29-1061 Anesthesiologists
Administer anesthetics during surgery or other medical procedures.

29-1062 Family and General Practitioners
Diagnose, treat, and help prevent diseases and injuries that commonly occur in the general population.

29-1063 Internists, General
Diagnose and provide non-surgical treatment of diseases and injuries of internal organ systems. Provide care mainly for adults who have a wide range of problems associated with the internal organs. Include subspecialists, such as cardiologists and gastroenterologists, with "All Other Physicians" (29-1069).

29-1064 Obstetricians and Gynecologists
Diagnose, treat, and help prevent diseases of women, especially those affecting the reproductive system and the process of childbirth.
Illustrative Example: OB/Gyn

29-1065 Pediatricians, General
Diagnose, treat, and help prevent children's diseases and injuries.

29-1066 Psychiatrists
Diagnose, treat, and help prevent disorders of the mind.
Illustrative Examples: Psychoanalyst; Neuropsychiatrist

29-1067 Surgeons
Treat diseases, injuries, and deformities by invasive methods, such as manual manipulation or by using instruments and appliances.
Illustrative Examples: Orthopedic Surgeon; Cardiovascular Surgeon; Plastic Surgeon

29-1069 Physicians and Surgeons, All Other
All physicians and surgeons not listed separately.
Illustrative Examples: Cardiologist; Dermatologist; Ophthalmologist

29-1071 Physician Assistants
Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants. Exclude "Emergency Medical Technicians and Paramedics" (29-2041), "Medical Assistants" (31-9092), and "Registered Nurses" (29-1111).
Illustrative Example: Anesthesiologist Assistant

29-1081 Podiatrists
Diagnose and treat diseases and deformities of the human foot.
Illustrative Examples: Podiatric Surgeon; Foot Orthopedist; Pododermatologist

29-1111 Registered Nurses
(Nurse Midwife, Nurse Practitioner) Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required. Include advance practice nurses such as: nurse practitioners, clinical nurse specialists, certified nurse midwives, and certified registered nurse anesthetists. Advanced practice nursing is practiced by RNs who have specialized formal, post-basic education and who function in highly autonomous and specialized roles.
Illustrative Example: Nursing Supervisor

29-1121 Audiologists
Assess and treat persons with hearing and related disorders. May fit hearing aids and provide auditory training. May perform research related to hearing problems.
Illustrative Example: Hearing Therapist

29-1122 Occupational Therapists
Assess, plan, organize, and participate in rehabilitative programs that help restore vocational, homemaking, and daily living skills, as well as general independence, to disabled persons.

29-1123 Physical Therapists
Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.
Illustrative Examples: Physiotherapist; Pulmonary Physical Therapist

29-1124 Radiation Therapists
Provide radiation therapy to patients as prescribed by a radiologist according to established practices and standards. Duties may include reviewing prescription and diagnosis; acting as liaison with physician and supportive care personnel; preparing equipment, such as immobilization, treatment, and protection devices; and maintaining records, reports, and files. May assist in dosimetry procedures and tumor localization.
Illustrative Examples: Dosimetrist; Radiation Therapy Technologist

29-1125 Recreational Therapists
Plan, direct, or coordinate medically-approved recreation programs for patients in hospitals, nursing homes, or other institutions. Activities include sports, trips, dramatics, social activities, and arts and crafts. May assess a patient condition and recommend appropriate recreational activity.
Illustrative Example: Therapeutic Recreation Specialist

29-1126 Respiratory Therapists
Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.
Illustrative Examples: Inhalation Therapist; Respiratory Care Practitioner; Oxygen Therapist

29-1127 Speech-Language Pathologists
(Speech Therapist) Assess and treat persons with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use. May perform research related to speech and language problems.
Illustrative Examples: Oral Therapist; Speech Clinician

29-1129 Therapists, All Other
All therapists not listed separately.
Illustrative Examples: Corrective and Manual Arts Therapist; Hydrotherapist; Music Therapist

29-1131 Veterinarians
(Veterinary Inspector) Diagnose and treat diseases and dysfunctions of animals. May engage in a particular function, such as research and development, consultation, administration, technical writing, sale or production of commercial products, or rendering of technical services to commercial firms or other organizations. Include veterinarians who inspect livestock.
Illustrative Examples: Animal Pathologist; Animal Surgeon; Veterinary Bacteriologist

29-1155 Speech-Language Pathologists, Non R&D
Assess and treat persons with speech, language, voice, and fluency disorders.

29-1156 Speech-Language Pathologists, R&D
These persons spend the majority of their time researching speech and language disorders.

29-1199 Health Diagnosing and Treating Practitioners, All Other
All health diagnosing and treating practitioners not listed separately.
Illustrative Examples: Acupuncturist; Homeopathic Doctor; Hypnotherapist

Health Technologists and Technicians

29-2011 Medical and Clinical Laboratory Technologists
Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.
Illustrative Examples: Blood Bank Technologist; Cytotechnologist; Immunohematologist

29-2012 Medical and Clinical Laboratory Technicians
Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.
Illustrative Examples: Blood Bank Technician; Cytotechnician; Serology Technician

29-2021 Dental Hygienists
Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop X-rays, or apply fluoride or sealants.
Illustrative Example: Oral Hygienist

29-2031 Cardiovascular Technologists and Technicians
(E.K.G. Technician, Vascular Technologist) Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary-functions, lung capacity, and similar tests. Include vascular technologists.
Illustrative Examples: Cardiographer; Cardiopulmonary Technologist

29-2032 Diagnostic Medical Sonographers
(Ultrasound Technologist) Produce ultrasonic recordings of internal organs for use by physicians.
Illustrative Example: Ultrasonic Tester

29-2033 Nuclear Medicine Technologists
Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies utilizing a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Subject patients to radiation. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques.
Illustrative Example: Radioisotope Technician

29-2034 Radiologic Technologists and Technicians
(X-Ray Technician) Take X-rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Include technologists who specialize in other modalities, such as computed tomography and magnetic resonance. Include workers whose primary duties are to demonstrate portions of the human body on X-ray film or fluoroscopic screen.
Illustrative Examples: CAT Scan Operator; Skiagrapher

29-2041 Emergency Medical Technicians and Paramedics
Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.
Illustrative Example: E.M.T.

29-2051 Dietetic Technicians
Assist dietitians in the provision of food service and nutritional programs. Under the supervision of dietitians, may plan and produce meals based on established guidelines, teach principles of food and nutrition, or counsel individuals.

29-2052 Pharmacy Technicians
Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications.

29-2053 Psychiatric Technicians
Care for mentally impaired or emotionally disturbed individuals, following physician instructions and hospital procedures. Monitor patients' physical and emotional well-being and report to medical staff. May participate in rehabilitation and treatment programs, help with personal hygiene, and administer oral medications and hypodermic injections.
Illustrative Example: Mental Health Technician

29-2054 Respiratory Therapy Technicians
Provide specific, well defined respiratory care procedures under the direction of respiratory therapists and physicians.
Illustrative Example: Oxygen Therapy Technician

29-2055 Surgical Technologists
(Surgical Orderly) Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.
Illustrative Examples: Operating Room Technician; Scrub Technician

29-2056 Veterinary Technologists and Technicians
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.
Illustrative Examples: Animal Technician; Veterinary X-ray Operator

29-2061 Licensed Practical and Licensed Vocational Nurses
(Maternity Nurse) Care for ill, injured, convalescent, or disabled persons in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.
Illustrative Example: Licensed Attendant

29-2071 Medical Records and Health Information Technicians
(Medical Records Librarian) Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information for health requirements and standards.
Illustrative Examples: Disability Rater; Medical Records Specialist; Medical Library Historian

29-2081 Opticians, Dispensing
Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. Include contact lens opticians.
Illustrative Examples: Contact Lens Fitter; Eyeglass Fitter

29-2091 Orthotists and Prosthetists
Assist patients with disabling conditions of limbs and spine or with partial or total absence of limb by fitting and preparing orthopedic braces or prostheses.
Illustrative Examples: Artificial Limb Fitter; Orthopedic Mechanic

29-2099 Health Technologists and Technicians, All Other
All health technologists and technicians not listed separately.
Illustrative Examples: Dialysis Technician; Encephalographer; Hearing Aid Specialist

Other Healthcare Practitioners and Technical Occupations

29-9011 Occupational Health and Safety Specialists
Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals. May be employed in the public or private sector. Include environmental protection officers.
Illustrative Examples: Health Sanitarian; Industrial Hygienist

29-9012 Occupational Health and Safety Technicians
Collect data on work environments for analysis by occupational health and safety specialists. Implement and conduct evaluation of programs designed to limit chemical, physical, biological, and ergonomic risks to workers.
Illustrative Example: Mine Examiner

29-9091 Athletic Trainers
Evaluate, advise, and treat athletes to assist recovery from injury, avoid injury, or maintain peak physical fitness.

29-9099 Healthcare Practitioners and Technical Workers, All Other
All healthcare practitioners and technical workers not listed separately.

Healthcare Support Occupations

Nursing, Psychiatric, and Home Health Aides

31-1011 Home Health Aides
Provide routine, personal healthcare, such as bathing, dressing, or grooming, to elderly, convalescent, or disabled persons in the home of patients or in a residential care facility.
Illustrative Example: Home Attendant

31-1012 Nursing Aides, Orderlies, and Attendants
(Hospital Aide) Provide basic patient care under direction of nursing staff. Perform duties, such as feed, bathe, dress, groom, or move patients, or change linens. Exclude "Home Health Aides" (31-1011) and "Psychiatric Aides" (31-1013).
Illustrative Examples: Certified Nursing Assistant; Infirmary Attendant

31-1013 Psychiatric Aides
Assist mentally impaired or emotionally disturbed patients, working under direction of nursing and medical staff.
Illustrative Examples: Charge Attendant; Psychiatric Orderly

Occupational and Physical Therapist Assistants and Aides

31-2011 Occupational Therapist Assistants
Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with State laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training.
Illustrative Example: Occupational Therapy Technician

31-2012 Occupational Therapist Aides
Under close supervision of an occupational therapist or occupational therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing patient and treatment room.

31-2021 Physical Therapist Assistants
Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with State laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training.
Illustrative Example: Corrective Therapy Assistant

31-2022 Physical Therapist Aides
Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.
Illustrative Example: Physiotherapy Aide

Other Healthcare Support Occupations

31-9011 Massage Therapists
Massage customers for hygienic or remedial purposes.
Illustrative Examples: Masseuse; Masseur; Rubber

31-9091 Dental Assistants
Assist dentist, set up patient and equipment, and keep records.

31-9092 Medical Assistants
(Morgue Attendant, Physician's Aide) Perform administrative and certain clinical duties under the direction of physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician. Exclude "Physician Assistants" (29-1071).
Illustrative Example: Ophthalmic Aide

31-9093 Medical Equipment Preparers
Prepare, sterilize, install, or clean laboratory or healthcare equipment. May perform routine laboratory tasks and operate or inspect equipment.

31-9094 Medical Transcriptionists
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.
Illustrative Example: Medical Stenographer

31-9095 Pharmacy Aides
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.
Illustrative Examples: Dispensary Attendant; Prescription Clerk

31-9096 Veterinary Assistants and Laboratory Animal Caretakers
Feed, water, and examine pets and other nonfarm animals for signs of illness, disease, or injury in laboratories and animal hospitals and clinics. Clean and disinfect cages and work areas, and sterilize laboratory and surgical equipment. May provide routine post-operative care, administer medication orally or topically, or prepare samples for laboratory examination under the supervision of veterinary or laboratory animal technologists or technicians, veterinarians, or scientists. Exclude "Nonfarm Animal Caretakers" (39-2021).

31-9099 Healthcare Support Workers, All Other
All healthcare support workers not listed separately.
Illustrative Examples: Phlebotomist; Reducing Salon Attendant

Protective Service Occupations

First-Line Supervisors/Managers, Protective Service Workers

33-1011 First-Line Supervisors/Managers of Correctional Officers
Supervise and coordinate activities of correctional officers and jailers.
Illustrative Examples: Prison Guard Supervisor; Prison Warden

33-1012 First-Line Supervisors/Managers of Police and Detectives
(Police Chief) Supervise and coordinate activities of members of police force.
Illustrative Example: Precinct Captain

33-1021 First-Line Supervisors/Managers of Fire Fighting and Prevention Workers
(Fire Chief) Supervise and coordinate activities of workers engaged in fire fighting and fire prevention and control.
Illustrative Examples: Fire Captain; Fire Marshal

33-1099 First-Line Supervisors/Managers, Protective Service Workers, All Other
All protective service supervisors not listed separately above.
Illustrative Examples: Security Director; Supervisor Animal Cruelty Investigation; Supervisor Plant Protection

Fire Fighting and Prevention Workers

33-2011 Fire Fighters
Control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster management.
Illustrative Examples: Explosive Ordnance Disposal Technician; Fireboat Operator; Smoke Jumper

33-2021 Fire Inspectors and Investigators
Inspect buildings to detect fire hazards and enforce local ordinances and State laws. Investigate and gather facts to determine cause of fires and explosions.
Illustrative Example: Arson Investigator

33-2022 Forest Fire Inspectors and Prevention Specialists
Enforce fire regulations and inspect for forest fire hazards. Report forest fires and weather conditions.
Illustrative Examples: Forest Fire Control Officer; District Ranger; Fire Ranger

Law Enforcement Workers

33-3011 Bailiffs
Maintain order in courts of law.
Illustrative Examples: Court Officer; Sergeant at Arms

33-3012 Correctional Officers and Jailers
Guard inmates in penal or rehabilitative institution in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point. Include deputy sheriffs and police who spend the majority of their time guarding prisoners in correctional institutions.
Illustrative Examples: Convict Guard; Custodial Officer; Prison Guard

33-3021 Detectives and Criminal Investigators
Conduct investigations related to suspected violations of Federal, State, or local laws to prevent or solve crimes. Exclude "Private Detectives and Investigators" (33-9021).
Illustrative Examples: Police Inspector; Deputy United States Marshal; Narcotics Agent

33-3031 Fish and Game Wardens
(Wildlife Officer) Patrol assigned area to prevent fish and game law violations. Investigate reports of damage to crops or property by wildlife. Compile biological data.
Illustrative Examples: State Game Protector; Wildlife Control Agent

33-3041 Parking Enforcement Workers
(Meter Maid) Patrol assigned area, such as public parking lot or section of city to issue tickets to overtime parking violators and illegally parked vehicles.
Illustrative Examples: Parking Enforcement Officer; Parking Meter Checker

33-3051 Police and Sheriff's Patrol Officers
Maintain order, enforce laws and ordinances, and protect life and property in an assigned patrol district. Perform combination of following duties: patrol a specific area on foot or in a vehicle; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts.
Illustrative Examples: Border Guard; Campus Police; City Constable

33-3052 Transit and Railroad Police
Protect and police railroad and transit property, employees, or passengers.
Illustrative Examples: Railroad Detective; Track Patrol

Other Protective Service Workers

33-9011 Animal Control Workers
Handle animals for the purpose of investigations of mistreatment, or control of abandoned, dangerous, or unattended animals.
Illustrative Examples: Animal Warden; Dog Catcher; Humane Officer

33-9021 Private Detectives and Investigators
Detect occurrences of unlawful acts or infractions of rules in private establishment, or seek, examine, and compile information for client.
Illustrative Example: House Detective

33-9031 Gaming Surveillance Officers and Gaming Investigators
Act as oversight and security agent for management and customers. Observe casino or casino hotel operation for irregular activities such as cheating or theft by either employees or patrons. May utilize one-way mirrors above the casino floor, cashier's cage, and from desk. Use of audio/video equipment is also common to observe operation of the business. Usually required to provide verbal and written reports of all violations and suspicious behavior to supervisor.
Illustrative Examples: Casino Surveillance Officer; Casino Investigator

33-9032 Security Guards
(Bouncer) Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules.
Illustrative Examples: Bodyguard; Watchguard

33-9091 Crossing Guards
(Flagger) Guide or control vehicular or pedestrian traffic at such places as streets, schools, railroad crossings, or construction sites.
Illustrative Examples: Gate Operator; School Patrol

33-9092 Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers
Monitor recreational areas, such as pools, beaches, or ski slopes to provide assistance and protection to participants.

33-9099 Protective Service Workers, All Other
All protective service workers not listed separately.
Illustrative Examples: Park Ranger; Surveillance-System Monitor; Bus Monitor

Food Preparation and Serving Related Occupations

Supervisors, Food Preparation and Serving Workers

35-1011 Chefs and Head Cooks
Direct the preparation, seasoning, and cooking of salads, soups, fish, meats, vegetables, desserts, or other foods. May plan and price menu items, order supplies, and keep records and accounts. May participate in cooking.
Illustrative Examples: Executive Chef; Pastry Chef; Sous Chef

35-1012 First-Line Supervisors/Managers of Food Preparation and Serving Workers
Supervise workers engaged in preparing and serving food.
Illustrative Examples: Cafeteria Manager; Caterer; Bar Manager

Cooks and Food Preparation Workers

35-2011 Cooks, Fast Food
Prepare and cook food in a fast food restaurant with a limited menu. Duties of the cooks are limited to preparation of a few basic items and normally involve operating large-volume single-purpose cooking equipment.
Illustrative Examples: Fry Cook; Pizza Maker

35-2012 Cooks, Institution and Cafeteria
Prepare and cook large quantities of food for institutions, such as schools, hospitals, or cafeterias.
Illustrative Examples: Camp Cook; Mess Cook; Galley Cook

35-2013 Cooks, Private Household
Prepare meals in private homes.

35-2014 Cooks, Restaurant
Prepare, season, and cook soups, meats, vegetables, desserts, or other foodstuffs in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.
Illustrative Examples: Broiler Cook; Specialty Foreign Food Cook; Garde-manger

35-2015 Cooks, Short Order
Prepare and cook to order a variety of foods that require only a short preparation time. May take orders from customers and serve patrons at counters or tables. Exclude "Fast Food Cooks" (35-2011).
Illustrative Examples: Barbecue Cook; Griddle Cook

35-2019 Cooks, All Other
All cooks not listed separately.

35-2021 Food Preparation Workers
(Kitchen Helper) Perform a variety of food preparation duties other than cooking, such as preparing cold foods and shellfish, slicing meat, and brewing coffee or tea.
Illustrative Examples: Coffee Maker; Sandwich Maker

Food and Beverage Serving Workers

35-3011 Bartenders
Mix and serve drinks to patrons, directly or through waitstaff.
Illustrative Examples: Barkeeper; Taproom Attendant

35-3021 Combined Food Preparation and Serving Workers, Including Fast Food
Perform duties which combine both food preparation and food service.
Illustrative Examples: Caterers Aide; Deli Clerk; Mess Attendant

35-3022 Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
Serve food to diners at counter or from a steam table. Include counter attendants who also wait tables with "Waiters and Waitresses" (35-3031).
Illustrative Examples: Canteen Operator; Snack Bar Attendant; Hot Dog Attendant

35-3031 Waiters and Waitresses
Take orders and serve food and beverages to patrons at tables in dining establishment. Exclude "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022).
Illustrative Examples: Cocktail Waiter; Wine Steward; Head Waitress

35-3041 Food Servers, Nonrestaurant
(Tray-Service Worker) Serve food to patrons outside of a restaurant environment, such as in hotels, hospital rooms, or cars. Exclude "Door-to-Door Sales Workers, News and Street Vendors, and Related Workers" (41-9091) and "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022).
Illustrative Examples: Curb Attendant; Hospital Tray-Service Worker; Room Service Clerk

Other Food Preparation and Serving Related Workers

35-9011 Dining Room and Cafeteria Attendants and Bartender Helpers
(Busser) Facilitate food service. Clean tables, carry dirty dishes, replace soiled table linens; set tables; replenish supply of clean linens, silverware, glassware, and dishes; supply service bar with food, and serve water, butter, and coffee to patrons.
Illustrative Examples: Lunchroom Attendant; Tray Setter

35-9021 Dishwashers
Clean dishes, kitchen, food preparation equipment, or utensils.
Illustrative Examples: Kitchen Cleaner; Glass Washer; Pot Washer

35-9031 Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
Welcome patrons, seat them at tables or in lounge, and help ensure quality of facilities and service.
Illustrative Examples: Maitre D'; Dining Room Host

35-9099 Food Preparation and Serving Related Workers, All Other
All food preparation and serving related workers not listed separately.
Illustrative Examples: Vending Machine Attendant; Cafeteria Line Runner

Building and Grounds Cleaning and Maintenance Occupations

Supervisors, Building and Grounds Cleaning and Maintenance Workers

37-1011 First-Line Supervisors/Managers of Housekeeping and Janitorial Workers
Supervise work activities of cleaning personnel in hotels, hospitals, offices, and other establishments.
Illustrative Examples: Building Superintendent; Household Manager; Housekeeping Supervisor

37-1012 First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers
Plan, organize, direct, or coordinate activities of workers engaged in landscaping or groundskeeping activities, such as planting and maintaining ornamental trees, shrubs, flowers, and lawns, and applying fertilizers, pesticides, and other chemicals, according to contract specifications. May also coordinate activities of workers engaged in terracing hillsides, building retaining walls, constructing pathways, installing patios, and similar activities in following a landscape design plan. Work may involve reviewing contracts to ascertain service, machine, and work force requirements; answering inquiries from potential customers regarding methods, material, and price ranges; and preparing estimates according to labor, material, and machine costs.
Illustrative Examples: Landscape Contractor; Golf Course Superintendent; Nursery Supervisor

Building Cleaning and Pest Control Workers

37-2011 Janitors and Cleaners, Except Maids and Housekeeping Cleaners
Keep buildings in clean and orderly condition. Perform heavy cleaning duties, such as cleaning floors, shampooing rugs, washing walls and glass, and removing rubbish. Duties may include tending furnace and boiler, performing routine maintenance activities, notifying management of need for repairs, and cleaning snow or debris from sidewalk.
Illustrative Examples: Floor Cleaner; Building Custodian; Window Washer

37-2012 Maids and Housekeeping Cleaners
Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels, restaurants, and hospitals, in a clean and orderly manner. Duties include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.
Illustrative Examples: Bed Maker; Chamber Maid; Housekeeper

37-2019 Building Cleaning Workers, All Other
All building cleaning workers not listed separately.
Illustrative Examples: Chimney Sweep; Air Purifier Servicer

37-2021 Pest Control Workers
(Exterminator) Spray or release chemical solutions or toxic gases and set traps to kill pests and vermin, such as mice, termites, and roaches, that infest buildings and surrounding areas.
Illustrative Examples: Exterminator Helper; Fumigator

Grounds Maintenance Workers

37-3011 Landscaping and Groundskeeping Workers
(Greenskeeper, Sprinkler Installer) Landscape or maintain grounds of property using hand or power tools or equipment. Workers typically perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, sprinkler installation, and installation of mortarless segmental concrete masonry wall units. Exclude "Farmworkers and Laborers, Crop, Nursery, and Greenhouse" (45-2092).
Illustrative Examples: Landscape Gardener; Outdoor Sprinkler Installer

37-3012 Pesticide Handlers, Sprayers, and Applicators, Vegetation
Mix or apply pesticides, herbicides, fungicides, or insecticides through sprays, dusts, vapors, soil incorporation or chemical application on trees, shrubs, lawns, or botanical crops. Usually requires specific training and State or Federal certification. Exclude "Commercial Pilots" (53-2012) who operate aviation equipment to dust or spray crops.
Illustrative Examples: Fruit Sprayer; Weed Controller

37-3013 Tree Trimmers and Pruners
Cut away dead or excess branches from trees or shrubs to maintain right-of-way for roads, sidewalks, or utilities, or to improve appearance, health, and value of tree. Prune or treat trees or shrubs using handsaws, pruning hooks, sheers, and clippers. May use truck-mounted lifts and power pruners. May fill cavities in trees to promote healing and prevent deterioration. Exclude workers who primarily perform duties of "Pesticide Handlers, Sprayers, and Applicators, Vegetation" (37-3012) and "Landscaping and Groundskeeping Workers" (37-3011).
Illustrative Examples: Tree Doctor; Grape Vine Pruner

37-3019 Grounds Maintenance Workers, All Other
All grounds maintenance workers not listed separately.

Personal Care and Service Occupations

Supervisors, Personal Care and Service Workers

39-1011 Gaming Supervisors
Supervise gaming operations and personnel in an assigned area. Circulate among tables and observe operations. Ensure that stations and games are covered for each shift. May explain and interpret operating rules of house to patrons. May plan and organize activities and create friendly atmosphere for guests in hotels/casinos. May adjust service complaints. Exclude "Slot Key Persons" (39-1012).
Illustrative Examples: Executive Casino Host; Table Games Supervisor; Pit Boss

39-1012 Slot Key Persons
Coordinate/supervise functions of slot department workers to provide service to patrons. Handle and settle complaints of players. Verify and payoff jackpots. Reset slot machines after payoffs. Make minor repairs or adjustments to slot machines. Recommend removal of slot machines for repair. Report hazards and enforces safety rules.
Illustrative Example: Slot Floor Person

39-1021 First-Line Supervisors/Managers of Personal Service Workers
Supervise and coordinate activities of personal service workers, such as supervisors of flight attendants, hairdressers, or caddies.
Illustrative Examples: Caddymaster; Barber Shop Manager; Health Club Manager

Animal Care and Service Workers

39-2011 Animal Trainers
Train animals for riding, harness, security, performance, or obedience, or assisting persons with disabilities. Accustom animals to human voice and contact; and condition animals to respond to commands. Train animals according to prescribed standards for show or competition. May train animals to carry pack loads or work as part of pack team.
Illustrative Examples: Dog Trainer; Horse Breaker; Lion Trainer

39-2021 Nonfarm Animal Caretakers
(Groomer) Feed, water, groom, bathe, exercise, or otherwise care for pets and other nonfarm animals, such as dogs, cats, ornamental fish or birds, zoo animals, and mice. Work in settings such as kennels, animal shelters, zoos, circuses, and aquariums. May keep records of feedings, treatments, and animals received or discharged. May clean, disinfect, and repair cages, pens, or fish tanks. Exclude "Veterinary Assistants and Laboratory Animal Caretakers" (31-9096).
Illustrative Examples: Dog Groomer; Kennel Worker; Stable Attendant

Entertainment Attendants and Related Workers

39-3011 Gaming Dealers
Operate table games. Stand or sit behind table and operate games of chance by dispensing the appropriate number of cards or blocks to players, or operating other gaming equipment. Compare the house's hand against players' hands and payoff or collect players' money or chips.
Illustrative Examples: Blackjack Dealer; Roulette Dealer; Craps Dealer

39-3012 Gaming and Sports Book Writers and Runners
Assist in the operation of games such as keno and bingo. Scan winning tickets presented by patrons, calculate amount of winnings and pay patrons. May operate keno and bingo equipment. May start gaming equipment that randomly selects numbers. May announce number selected until total numbers specified for each game are selected. May pick up tickets from players, collect bets, receive, verify and record patrons' cash wagers.
Illustrative Examples: Sheet Writer; Keno Writer; Keno Runner

39-3019 Gaming Service Workers, All Other
All Gaming Service Workers not listed separately.
Illustrative Examples: Shill; Chip Mucker; Pit Clerk

39-3021 Motion Picture Projectionists
Set up and operate motion picture projection and related sound reproduction equipment.
Illustrative Examples: Chief Projectionist; Film Projector Operator

39-3031 Ushers, Lobby Attendants, and Ticket Takers
Assist patrons at entertainment events by performing duties, such as collecting admission tickets and passes from patrons, assisting in finding seats, searching for lost articles, and locating such facilities as rest rooms and telephones.
Illustrative Examples: Door Attendant; Ticket Collector

39-3091 Amusement and Recreation Attendants
(Caddy) Perform variety of attending duties at amusement or recreation facility. May schedule use of recreation facilities, maintain and provide equipment to participants of sporting events or recreational pursuits, or operate amusement concessions and rides.
Illustrative Examples: Arcade Attendant; Golf Course Starter

39-3092 Costume Attendants
Select, fit, and take care of costumes for cast members, and aid entertainers.
Illustrative Examples: Wardrobe Custodian; Dresser

39-3093 Locker Room, Coatroom, and Dressing Room Attendants
Provide personal items to patrons or customers in locker rooms, dressing rooms, or coatrooms.
Illustrative Examples: Bathhouse Attendant; Jockey Valet

39-3099 Entertainment Attendants and Related Workers, All Other
All entertainment attendants and related workers not listed separately.
Illustrative Example: Department Store Greeter

Funeral Service Workers

39-4011 Embalmers
Prepare bodies for interment in conformity with legal requirements.

39-4021 Funeral Attendants
Perform variety of tasks during funeral, such as placing casket in parlor or chapel prior to service; arranging floral offerings or lights around casket; directing or escorting mourners; closing casket; and issuing and storing funeral equipment.
Illustrative Examples: Mortician Helper; Pallbearer

Personal Appearance Workers

39-5011 Barbers
Provide barbering services, such as cutting, trimming, shampooing, and styling hair, trimming beards, or giving shaves.
Illustrative Examples: Barber Apprentice; Hair Cutter

39-5012 Hairdressers, Hairstylists, and Cosmetologists
Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May also apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.
Illustrative Examples: Beautician; Wig Stylist; Electrologist

39-5091 Makeup Artists, Theatrical and Performance
Apply makeup to performers to reflect period, setting, and situation of their role.

39-5092 Manicurists and Pedicurists
Clean and shape customers' fingernails and toenails. May polish or decorate nails.
Illustrative Example: Fingernail Sculptor

39-5093 Shampooers
Shampoo and rinse customers' hair.
Illustrative Example: Scalp Treatment Operator

39-5094 Skin Care Specialists
(Esthetician) Provide skin care treatments to face and body to enhance an individual's appearance.

Transportation, Tourism, and Lodging Attendants

39-6011 Baggage Porters and Bellhops
Handle baggage for travelers at transportation terminals or for guests at hotels or similar establishments.
Illustrative Examples: Baggage Handler; Lobby Porter; Skycap

39-6012 Concierges
Assist patrons at hotel, apartment or office building with personal services. May take messages, arrange or give advice on transportation, business services or entertainment, or monitor guest requests for housekeeping and maintenance.

39-6021 Tour Guides and Escorts
Escort individuals or groups on sightseeing tours or through places of interest, such as industrial establishments, public buildings, and art galleries.
Illustrative Examples: Page; Sightseeing Guide

39-6022 Travel Guides
Plan, organize, and conduct long distance cruises, tours, and expeditions for individuals and groups.
Illustrative Example: Cruise Director

39-6031 Flight Attendants
Provide personal services to ensure the safety and comfort of airline passengers during flight. Greet passengers, verify tickets, explain use of safety equipment, and serve food or beverages.
Illustrative Examples: Flight Steward; Airline Stewardess

39-6032 Transportation Attendants, Except Flight Attendants and Baggage Porters
Provide services to ensure the safety and comfort of passengers aboard ships, buses, trains, or within the station or terminal. Perform duties, such as greeting passengers, explaining the use of safety equipment, serving meals or beverages, or answering questions related to travel.
Illustrative Examples: Club Car Attendant; Ground Attendant; Subway Conductor

Other Personal Care and Service Workers

39-9011 Child Care Workers
(Bus Monitor) Attend to children at schools, businesses, private households, and child care institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play. Exclude "Preschool Teachers" (25-2011) and "Teacher Assistants" (25-9041).
Illustrative Examples: Baby Sitter; Governess; Nanny

39-9021 Personal and Home Care Aides
Assist elderly or disabled adults with daily living activities at the person's home or in a daytime non-residential facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide meals and supervised activities at non-residential care facilities. May advise families, the elderly, and disabled on such things as nutrition, cleanliness, and household utilities.
Illustrative Examples: Blind Escort; Caregiver; Geriatric Aide

39-9031 Fitness Trainers and Aerobics Instructors
(Personal Trainer) Instruct or coach groups or individuals in exercise activities and the fundamentals of sports. Demonstrate techniques and methods of participation. Observe participants and inform them of corrective measures necessary to improve their skills. Those required to hold teaching degrees should be reported in the appropriate teaching category. Exclude "Athletic Trainers" (29-9091).
Illustrative Examples: Exercise Teacher; Yoga Teacher

39-9032 Recreation Workers
(Camp Counselor) Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individual members.
Illustrative Examples: Playground Director; Activities Director

39-9041 Residential Advisors
Coordinate activities for residents of boarding schools, college fraternities or sororities, college dormitories, or similar establishments. Order supplies and determine need for maintenance, repairs, and furnishings. May maintain household records and assign rooms. May refer residents to counseling resources if needed.
Illustrative Examples: Dormitory Supervisor; House Parent

39-9099 Personal Care and Service Workers, All Other
All personal care and service workers not listed separately.
Illustrative Examples: Shoe Shiner; Chaperone; Servant

Sales and Related Occupations

Supervisors, Sales Workers

41-1011 First-Line Supervisors/Managers of Retail Sales Workers
Directly supervise sales workers in a retail establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.
Illustrative Examples: Department Manager; Flower Shop Manager; Supervisor of Cashiers

41-1012 First-Line Supervisors/Managers of Non-Retail Sales Workers
Directly supervise and coordinate activities of sales workers other than retail sales workers. May perform duties, such as budgeting, accounting, and personnel work, in addition to supervisory duties.
Illustrative Examples: District Sales Manager; Dry Cleaning Manager; Blood-Donor Recruiter Supervisor

Retail Sales Workers

41-2011 Cashiers
(Toll Collector) Receive and disburse money in establishments other than financial institutions. Usually involves use of electronic scanners, cash registers, or related equipment. Often involved in processing credit or debit card transactions and validating checks.
Illustrative Examples: Auction Clerk; Disbursement Clerk

41-2012 Gaming Change Persons and Booth Cashiers
(Slot Attendant) Exchange coins and tokens for patrons' money. May issue payoffs and obtain customer's signature on receipt when winnings exceed the amount held in the slot machine. May operate a booth in the slot machine area and furnish change persons with money bank at the start of the shift, or count and audit money in drawers.
Illustrative Example: Carousel Attendant

41-2021 Counter and Rental Clerks
Receive orders for repairs, rentals, and services. May describe available options, compute cost, and accept payment.
Illustrative Examples: Airplane-Charter Clerk; Car Rental Agent; Skate Shop Attendant

41-2022 Parts Salespersons
Sell spare and replacement parts and equipment in repair shop or parts store.
Illustrative Examples: Parts Clerk; Auto Parts Salesperson; Electronic Parts Salesperson

41-2031 Retail Salespersons
Sell merchandise, such as furniture, motor vehicles, appliances, or apparel in a retail establishment. Exclude "Cashiers" (41-2011).
Illustrative Examples: Car Dealer; Haberdasher; Wallpaper Salesperson

Sales Representatives, Services

41-3011 Advertising Sales Agents
Sell or solicit advertising, including graphic art, advertising space in publications, custom made signs, or TV and radio advertising time. May obtain leases for outdoor advertising sites or persuade retailer to use sales promotion display items.
Illustrative Examples: Radio Time Salesperson; Yellow Pages Salesperson; Leasing Agent Outdoor Advertising

41-3021 Insurance Sales Agents
Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as independent broker, or be employed by an insurance company.
Illustrative Examples: Insurance Broker; Insurance Solicitor; Pension Agent

41-3031 Securities, Commodities, and Financial Services Sales Agents
(Stock Broker) Buy and sell securities in investment and trading firms, or call upon businesses and individuals to sell financial services. Provide financial services, such as loan, tax, and securities counseling. May advise securities customers about such things as stocks, bonds, and market conditions.
Illustrative Examples: Investment Banker; Stock Trader

41-3041 Travel Agents
Plan and sell transportation and accommodations for travel agency customers. Determine destination, modes of transportation, travel dates, costs, and accommodations required.
Illustrative Examples: Travel Consultant; Travel Counselor

41-3099 Sales Representatives, Services, All Other
All services sales representatives not listed separately.
Illustrative Examples: Data Processing Sales Representative; Telecommunications Consultant

Sales Representatives, Wholesale and Manufacturing

41-4011 Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics, normally obtained from at least 2 years of post-secondary education.
Illustrative Examples: Electronics Sales Representative; Oilfield Equipment Sales Representative; Pharmaceutical Representative

41-4012 Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.
Illustrative Examples: Diamond Broker; Oil Distributor; Wool Merchant

Other Sales and Related Workers

41-9011 Demonstrators and Product Promoters
Demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product. May sell demonstrated merchandise.
Illustrative Examples: Home Demonstrator; Exhibit-Display Representative

41-9012 Models
Model garments and other apparel to display clothing before prospective buyers at fashion shows, private showings, retail establishments, or photographer. May pose for photos to be used for advertising purposes. May pose as subject for paintings, sculptures, and other types of artistic expression.
Illustrative Examples: Fashion Model; Mannequin; Photographer's Model

41-9021 Real Estate Brokers
Operate real estate office, or work for commercial real estate firm, overseeing real estate transactions. Other duties usually include selling real estate or renting properties and arranging loans.

41-9022 Real Estate Sales Agents
(Buyer Broker) Rent, buy, or sell property for clients. Perform duties, such as study property listings, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts. Include agents who represent buyer.
Illustrative Examples: Apartment Rental Agent; Land Agent; Right of Way Agent

41-9031 Sales Engineers
Sell business goods or services, the selling of which requires a technical background equivalent to a baccalaureate degree in engineering. Exclude "Engineers" (17-2011 through 17-2199) whose primary function is not marketing or sales.
Illustrative Examples: Aeronautical Products Sales Engineer; Industrial Machinery Sales Engineer; Nuclear Equipment Sales Engineer

41-9041 Telemarketers
Solicit orders for goods or services over the telephone.
Illustrative Examples: Telephone Salesperson; Telephone Solicitor

41-9091 Door-to-Door Sales Workers, News and Street Vendors, and Related Workers
Sell goods or services door-to-door or on the street.
Illustrative Examples: Peddler; Direct Selling

41-9099 Sales and Related Workers, All Other
All sales and related workers not listed separately.
Illustrative Examples: Bridal Consultant; Fund Raiser; Auctioneer

Office and Administrative Support Occupations

43-1011 First-Line Supervisors/Managers of Office and Administrative Support Workers
Supervise and coordinate the activities of clerical and administrative support workers.
Illustrative Examples: Claims Supervisor; Stock Room Manager; Teller Supervisor

Communications Equipment Operators

43-2011 Switchboard Operators, Including Answering Service
Operate telephone business systems equipment or switchboards to relay incoming, outgoing, and interoffice calls. May supply information to callers and record messages.
Illustrative Examples: Communication Center Operator; Exchange Operator; Telephone Answering Service Operator

43-2021 Telephone Operators
(Directory Assistance Operator) Provide information by accessing alphabetical and geographical directories. Assist customers with special billing requests, such as charges to a third party and credits or refunds for incorrectly dialed numbers or bad connections. May handle emergency calls and assist children or people with physical disabilities to make telephone calls.
Illustrative Examples: Long Distance Operator; Routing Operator

43-2099 Communications Equipment Operators, All Other
All communications equipment operators not listed separately.
Illustrative Example: Telegraph Operator

Financial Clerks

43-3011 Bill and Account Collectors
Locate and notify customers of delinquent accounts by mail, telephone, or personal visit to solicit payment. Duties include receiving payment and posting amount to customer's account; preparing statements to credit department if customer fails to respond; initiating repossession proceedings or service disconnection; keeping records of collection and status of accounts.
Illustrative Examples: Payment Collector; Collection Clerk; Installment Agent

43-3021 Billing and Posting Clerks and Machine Operators
Compile, compute, and record billing, accounting, statistical, and other numerical data for billing purposes. Prepare billing invoices for services rendered or for delivery or shipment of goods.
Illustrative Examples: Calculating Machine Operator; Invoice Control Clerk; Rating Clerk

43-3031 Bookkeeping, Accounting, and Auditing Clerks
Compute, classify, and record numerical data to keep financial records complete. Perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. May also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers.
Illustrative Examples: Accounts Receivable Clerk; Ledger Clerk; Voucher Examiner

43-3041 Gaming Cage Workers
In a gaming establishment, conduct financial transactions for patrons. May reconcile daily summaries of transactions to balance books. Accept patron's credit application and verify credit references to provide check-cashing authorization or to establish house credit accounts. May sell gambling chips, tokens, or tickets to patrons, or to other workers for resale to patrons. May convert gaming chips, tokens, or tickets to currency upon patron's request. May use a cash register or computer to record transaction.

43-3051 Payroll and Timekeeping Clerks
Compile and post employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions. May prepare paychecks.
Illustrative Examples: Attendance Clerk; Payroll Bookkeeper; Timekeeper

43-3061 Procurement Clerks
Compile information and records to draw up purchase orders for procurement of materials and services.
Illustrative Examples: Property and Supply Officer; Purchasing Clerk

43-3071 Tellers
Receive and pay out money. Keep records of money and negotiable instruments involved in a financial institution's various transactions.
Illustrative Examples: Foreign Exchange Clerk; Money Order Clerk; Securities Teller

Information and Record Clerks

43-4011 Brokerage Clerks
Perform clerical duties involving the purchase or sale of securities. Duties include writing orders for stock purchases and sales, computing transfer taxes, verifying stock transactions, accepting and delivering securities, tracking stock price fluctuations, computing equity, distributing dividends, and keeping records of daily transactions and holdings.
Illustrative Examples: Portfolio Assistant; Dividend Clerk; Telephone Quotation Clerk

43-4021 Correspondence Clerks
Compose letters in reply to requests for merchandise, damage claims, credit and other information, delinquent accounts, incorrect billings, or unsatisfactory services. Duties may include gathering data to formulate reply and typing correspondence.
Illustrative Examples: Collection Correspondent; Fan Mail Editor

43-4031 Court, Municipal, and License Clerks
(Register of Deeds) Perform clerical duties in courts of law, municipalities, and governmental licensing agencies and bureaus. May prepare docket of cases to be called; secure information for judges and court; prepare draft agendas or bylaws for town or city council; answer official correspondence; keep fiscal records and accounts; issue licenses or permits; record data, administer tests, or collect fees. Include chief clerks with "Managers, All Other" (11-9199).
Illustrative Examples: Circuit Court Clerk; Warrant Clerk

43-4041 Credit Authorizers, Checkers, and Clerks
(Loan Adjuster) Authorize credit charges against customers' accounts. Investigate history and credit standing of individuals or business establishments applying for credit. May interview applicants to obtain personal and financial data; determine credit worthiness; process applications; and notify customers of acceptance or rejection of credit.
Illustrative Examples: Credit Interviewer; Credit Rating Inspector

43-4051 Customer Service Representatives
Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints. Exclude individuals whose duties are primarily sales or repair.
Illustrative Examples: Complaint Adjuster; Passenger Relations Representative; Telephone Service Adviser

43-4061 Eligibility Interviewers, Government Programs
Determine eligibility of persons applying to receive assistance from government programs and agency resources, such as welfare, unemployment benefits, social security, and public housing.
Illustrative Examples: Unemployment Benefits Claims Taker; County Service Officer; Welfare Interviewer

43-4071 File Clerks
(Tape Librarian) File correspondence, cards, invoices, receipts, and other records in alphabetical or numerical order or according to the filing system used. Locate and remove material from file when requested.
Illustrative Examples: Computer Tape Librarian; Document Clerk; Records Custodian

43-4081 Hotel, Motel, and Resort Desk Clerks
Accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys, transmitting and receiving messages, keeping records of occupied rooms and guests' accounts, making and confirming reservations, and presenting statements to and collecting payments from departing guests.
Illustrative Examples: Register Clerk; Room Clerk

43-4111 Interviewers, Except Eligibility and Loan
(Admitting Clerk) Interview persons by telephone, mail, in person, or by other means for the purpose of completing forms, applications, or questionnaires. Ask specific questions, record answers, and assist persons with completing form. May sort, classify, and file forms.
Illustrative Examples: Census Taker; Market Research Interviewer; Out-patient Admitting Clerk

43-4121 Library Assistants, Clerical
(Circulation Clerk) Compile records, sort and shelve books, and issue and receive library materials such as pictures, cards, slides and microfilm. Locate library materials for loan and replace material in shelving area, stacks, or files according to identification number and title. Register patrons to permit them to borrow books, periodicals, and other library materials.
Illustrative Examples: Braille and Talking Books Clerk; Microfilm Clerk

43-4131 Loan Interviewers and Clerks
(Mortgage Clerk) Interview loan applicants to elicit information; investigate applicants' backgrounds and verify references; prepare loan request papers; and forward findings, reports, and documents to appraisal department. Review loan papers to ensure completeness, and complete transactions between loan establishment, borrowers, and sellers upon approval of loan.
Illustrative Examples: Loan Closer; Loan Processor

43-4141 New Accounts Clerks
Interview persons desiring to open bank accounts. Explain banking services available to prospective customers and assist them in preparing application form.
Illustrative Example: Banking Services Clerk

43-4151 Order Clerks
Receive and process incoming orders for materials, merchandise, classified ads, or services such as repairs, installations, or rental of facilities. Duties include informing customers of receipt, prices, shipping dates, and delays; preparing contracts; and handling complaints. Exclude "Dispatchers, Except Police, Fire, and Ambulance" (43-5032) who both dispatch and take orders for services.
Illustrative Examples: Catalogue Clerk; Subscription Clerk; Classified Advertisement Clerk

43-4161 Human Resources Assistants, Except Payroll and Timekeeping
(Personnel Clerk) Compile and keep personnel records. Record data for each employee, such as address, weekly earnings, absences, amount of sales or production, supervisory reports on ability, and date of and reason for termination. Compile and type reports from employment records. File employment records. Search employee files and furnish information to authorized persons.

43-4171 Receptionists and Information Clerks
Answer inquiries and obtain information for general public, customers, visitors, and other interested parties. Provide information regarding activities conducted at establishment; location of departments, offices, and employees within organization. Exclude "Switchboard Operators, Including Answering Service" (43-2011).
Illustrative Examples: Appointment Clerk; Front Desk Clerk; Referral and Information Aide

43-4181 Reservation and Transportation Ticket Agents and Travel Clerks
(Gate Agent) Make and confirm reservations and sell tickets to passengers and for large hotel or motel chains. May check baggage and direct passengers to designated concourse, pier, or track; make reservations, deliver tickets, arrange for visas, contact individuals and groups to inform them of package tours, or provide tourists with travel information, such as points of interest, restaurants, rates, and emergency service. Exclude "Travel Agents" (41-3041), "Hotel, Motel, and Resort Desk Clerks" (43-4081), and "Cashiers" (41-2011) who sell tickets for local transportation.
Illustrative Examples: Ticket Clerk; Hotel Reservationist

43-4199 Information and Record Clerks, All Other
All information and record clerks not listed separately.
Illustrative Examples: Student Admissions Clerk; Suggestion Clerk; Vault Custodian

Material Recording, Scheduling, Dispatching, and Distributing Workers

43-5011 Cargo and Freight Agents
Expedite and route movement of incoming and outgoing cargo and freight shipments in airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform. Prepare and examine bills of lading to determine shipping charges and tariffs.
Illustrative Examples: Routing Agent; Shipping Agent

43-5021 Couriers and Messengers
Pick up and carry messages, documents, packages, and other items between offices or departments within an establishment or to other business concerns, traveling by foot, bicycle, motorcycle, automobile, or public conveyance. Exclude "Truck Drivers, Light or Delivery Services" (53-3033).
Illustrative Examples: Message Delivery Clerk; Telegraph Messenger

43-5031 Police, Fire, and Ambulance Dispatchers
(Emergency Operator) Receive complaints from public concerning crimes and police emergencies. Broadcast orders to police patrol units in vicinity of complaint to investigate. Operate radio, telephone, or computer equipment to receive reports of fires and medical emergencies and relay information or orders to proper officials.
Illustrative Examples: 911 Operator; Public Safety Dispatcher

43-5032 Dispatchers, Except Police, Fire, and Ambulance
Schedule and dispatch workers, work crews, equipment, or service vehicles for conveyance of materials, freight, or passengers, or for normal installation, service, or emergency repairs rendered outside the place of business. Duties may include using radio, telephone, or computer to transmit assignments and compiling statistics and reports on work progress.
Illustrative Examples: Security Dispatcher; Repair Service Dispatcher; Taxicab Dispatcher

43-5041 Meter Readers, Utilities
Read meter and record consumption of electricity, gas, water, or steam.
Illustrative Examples: Electric Meter Reader; Meter Record Clerk; Water Meter Reader

43-5051 Postal Service Clerks
Perform any combination of tasks in a post office, such as receive letters and parcels; sell postage and revenue stamps, postal cards, and stamped envelopes; fill out and sell money orders; place mail in pigeon holes of mail rack or in bags according to State, address, or other scheme; and examine mail for correct postage.
Illustrative Examples: Parcel Post Clerk; Special Delivery Clerk; Stamp Clerk

43-5052 Postal Service Mail Carriers
Sort mail for delivery. Deliver mail on established route by vehicle or on foot.
Illustrative Examples: Letter Carrier; Mail Deliverer; Route Carrier

43-5053 Postal Service Mail Sorters, Processors, and Processing Machine Operators
Prepare incoming and outgoing mail for distribution. Examine, sort, and route mail by State, type of mail, or other scheme. Load, operate, and occasionally adjust and repair mail processing, sorting, and canceling machinery. Keep records of shipments, pouches, and sacks; and other duties related to mail handling within the postal service. Must complete a competitive exam. Exclude "Postal Service Clerks" (43-5051) and "Postal Service Mail Carriers" (43-5052).
Illustrative Examples: Mail Weigher; Mail Handler Sorting Mail

43-5061 Production, Planning, and Expediting Clerks
(Assignment Agent) Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule. Duties include reviewing and distributing production, work, and shipment schedules; conferring with department supervisors to determine progress of work and completion dates; and compiling reports on progress of work, inventory levels, costs, and production problems. Exclude "Weighers, Measurers, Checkers, and Samplers, Recordkeeping" (43-5111).
Illustrative Examples: Production Dispatcher; Expediter

43-5071 Shipping, Receiving, and Traffic Clerks
(Freight Clerk) Verify and keep records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products. Exclude "Stock Clerks and Order Fillers" (43-5081) and "Weighers, Measurers, Checkers, and Samplers, Recordkeeping" (43-5111).
Illustrative Examples: Receiver; Garment Sorter; Freight Separator

43-5081 Stock Clerks and Order Fillers
(Tool-Crib Attendant) Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays. Exclude "Laborers and Freight, Stock, and Material Movers, Hand" (53-7062), and "Shipping, Receiving, and Traffic Clerks" (43-5071).
Illustrative Examples: Inventory Control Clerk; Warehouse Clerk

43-5111 Weighers, Measurers, Checkers, and Samplers, Recordkeeping
Weigh, measure, and check materials, supplies, and equipment for the purpose of keeping relevant records. Duties are primarily clerical by nature. Include workers who collect and keep record of samples of products or materials. Exclude production "Inspectors, Testers, Sorters, Samplers, and Weighers" (51-9061).
Illustrative Examples: Counter; Inventory Checker; Scale Attendant

Secretaries and Administrative Assistants

43-6011 Executive Secretaries and Administrative Assistants
Provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff. Exclude "Secretaries" (43-6012 through 43-6014).
Illustrative Example: Administrative Aide

43-6012 Legal Secretaries
Perform secretarial duties utilizing legal terminology, procedures, and documents. Prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas. May also assist with legal research.

43-6013 Medical Secretaries
Perform secretarial duties utilizing specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.
Illustrative Examples: Psychiatric Secretary; Dental Secretary

43-6014 Secretaries, Except Legal, Medical, and Executive
Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers. Exclude legal, medical, or executive secretaries and administrative assistants (43-6011 through 43-6013).
Illustrative Examples: Personal Secretary; Office Secretary; Receptionist Secretary

Other Office and Administrative Support Workers

43-9011 Computer Operators
(Peripheral Equipment Operator) Monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. May enter commands at a computer terminal and set controls on computer and peripheral devices. Monitor and respond to operating and error messages. Exclude "Data Entry Keyers" (43-9021).
Illustrative Examples: Console Operator; Data Processing Clerk

43-9021 Data Entry Keyers
(Keypunch Operator) Operate data entry device, such as keyboard or photo composing perforator. Duties may include verifying data and preparing materials for printing. Exclude "Word Processors and Typists" (43-9022).
Illustrative Example: Data Typist

43-9022 Word Processors and Typists
(Composing Data Keyer) Use word processor/computer or typewriter to type letters, reports, forms, or other material from rough draft, corrected copy, or voice recording. May perform other clerical duties as assigned. Include composing data keyers. Exclude "Data Entry Keyers" (43-9021), "Secretaries and Administrative Assistants" (43-6011 through 43-6014), "Court Reporters" (23-2091), and "Medical Transcriptionists" (31-9094).
Illustrative Examples: Clerk Typist; Dictaphone Typist

43-9031 Desktop Publishers
Format typescript and graphic elements using computer software to produce publication-ready material.
Illustrative Examples: Computer Compositor; Electronic Pagination System Operator; Page Makeup System Operator

43-9041 Insurance Claims and Policy Processing Clerks
Process new insurance policies, modifications to existing policies, and claims forms. Obtain information from policyholders to verify the accuracy and completeness of information on claims forms, applications and related documents, and company records. Update existing policies and company records to reflect changes requested by policyholders and insurance company representatives. Exclude "Claims Adjusters, Examiners, and Investigators" (13-1031).
Illustrative Examples: Claim Taker; Policy Issue Clerk; Underwriting Clerk

43-9051 Mail Clerks and Mail Machine Operators, Except Postal Service
Prepare incoming and outgoing mail for distribution. Use hand or mail handling machines to time stamp, open, read, sort, and route incoming mail; and address, seal, stamp, fold, stuff, and affix postage to outgoing mail or packages. Duties may also include keeping necessary records and completed forms.
Illustrative Examples: Addressing Machine Operator; Mail Distributor; Mail Opener

43-9061 Office Clerks, General
Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring limited knowledge of office management systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.
Illustrative Examples: Administrative Clerk; Office Assistant; Real Estate Clerk

43-9071 Office Machine Operators, Except Computer
Operate one or more of a variety of office machines, such as photocopying, photographic, and duplicating machines, or other office machines. Exclude "Computer Operators" (43-9011), "Mail Clerks and Mail Machine Operators" (43-9051) and "Billing and Posting Clerks and Machine Operators" (43-3021).
Illustrative Examples: Check Embosser; Coin Wrapping Machine Operator; Copy Machine Operator

43-9081 Proofreaders and Copy Markers
(Braille Proofreader) Read transcript or proof type setup to detect and mark for correction any grammatical, typographical, or compositional errors. Exclude workers whose primary duty is editing copy. Include proofreaders of Braille.
Illustrative Example: Copy Reader

43-9111 Statistical Assistants
(Actuarial Clerk) Compile and compute data according to statistical formulas for use in statistical studies. May perform actuarial computations and compile charts and graphs for use by actuaries. Include actuarial clerks.
Illustrative Examples: Tabulating Clerk; Compiler; Data Technician

43-9199 Office and Administrative Support Workers, All Other
All office and administrative support workers not listed separately.
Illustrative Examples: Notary Public; Envelope Stuffer

Farming, Fishing, and Forestry Occupations

Supervisors, Farming, Fishing, and Forestry Workers

45-1011 First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers
Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers. Exclude "First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers" (37-1012).
Illustrative Examples: Christmas Tree Farm Manager; Harvest Crew Supervisor; Fish Hatchery Supervisor

45-1012 Farm Labor Contractors
Recruit, hire, furnish, and supervise seasonal or temporary agricultural laborers for a fee. May transport, house, and provide meals for workers.
Illustrative Example: Harvesting Contractor

Agricultural Workers

45-2011 Agricultural Inspectors
Inspect agricultural commodities, processing equipment, and facilities, and fish and logging operations, to ensure compliance with regulations and laws governing health, quality, and safety.
Illustrative Examples: Cattle Examiner; Meat Grader; Grain Sampler

45-2021 Animal Breeders
Breed animals, including cattle, goats, horses, sheep, swine, poultry, dogs, cats, or pet birds. Select and breed animals according to their genealogy, characteristics, and offspring. May require a knowledge of artificial insemination techniques and equipment use. May involve keeping records on heats, birth intervals, or pedigree. Exclude "Nonfarm Animal Caretakers" (39-2021) who may occasionally breed animals as part of their other caretaking duties. Exclude "Animal Scientists" (19-1011) whose primary function is research.
Illustrative Examples: Artificial Inseminator; Chicken Fancier; Horse Breeder

45-2041 Graders and Sorters, Agricultural Products
Grade, sort, or classify unprocessed food and other agricultural products by size, weight, color, or condition. Exclude "Agricultural Inspectors" (45-2011).
Illustrative Examples: Chicken Grader; Cotton Classer; Fruit Sorter

45-2091 Agricultural Equipment Operators
Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. May perform tasks, such as crop baling or hay bucking. May operate stationary equipment to perform post-harvest tasks, such as husking, shelling, threshing, and ginning.
Illustrative Examples: Baler; Combine Operator; Tractor Driver

45-2092 Farmworkers and Laborers, Crop, Nursery, and Greenhouse
(Nursery Worker) Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; cleaning, grading, sorting, packing and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities. Exclude "Graders and Sorters, Agricultural Products" (45-2041). Exclude "Forest, Conservation, and Logging Workers" (45-4011 through 45-4029).
Illustrative Examples: Apple Picker; Tobacco Cutter; Vegetable Loader

45-2093 Farmworkers, Farm and Ranch Animals
Attend to live farm, ranch, or aquacultural animals that may include cattle, sheep, swine, goats, horses and other equines, poultry, finfish, shellfish, and bees. Attend to animals produced for animal products, such as meat, fur, skins, feathers, eggs, milk, and honey. Duties may include feeding, watering, herding, grazing, castrating, branding, de-beaking, weighing, catching, and loading animals. May maintain records on animals; examine animals to detect diseases and injuries; assist in birth deliveries; and administer medications, vaccinations, or insecticides as appropriate. May clean and maintain animal housing areas. Include workers who shear wool from sheep, and collect eggs in hatcheries.
Illustrative Examples: Horse Groomer; Beekeeper; Livestock Feeder

45-2099 Agricultural Workers, All Other
All agricultural workers not listed separately.
Illustrative Examples: Irrigation Worker; Livestock Showman

Fishing and Hunting Workers

45-3011 Fishers and Related Fishing Workers
Use nets, fishing rods, traps, or other equipment to catch and gather fish or other aquatic animals from rivers, lakes, or oceans, for human consumption or other uses. May haul game onto ship. Includes aquacultural laborers who work on fish farms with "Agricultural Workers, All Other" (45-2099).
Illustrative Examples: Fishing Boat Captain; Crabber; Seaweed Harvester

45-3021 Hunters and Trappers
Hunt and trap wild animals for human consumption, fur, feed, bait, or other purposes.
Illustrative Examples: Predatory Animal Exterminator; Bird Trapper

Forest, Conservation, and Logging Workers

45-4011 Forest and Conservation Workers
(Forester Aide) Under supervision, perform manual labor necessary to develop, maintain, or protect forest, forested areas, and woodlands through such activities as raising and transporting tree seedlings; combating insects, pests, and diseases harmful to trees; and building erosion and water control structures and leaching of forest soil. Include forester aides, seedling pullers, and tree planters.
Illustrative Examples: Christmas Tree Farm Worker; Seedling Puller; Forestry Laborer

45-4021 Fallers
(Lumberjack) Use axes or chainsaws to fell trees using knowledge of tree characteristics and cutting techniques to control direction of fall and minimize tree damage.
Illustrative Examples: Cross Cut Sawyer; Timber Cutter

45-4022 Logging Equipment Operators
Drive logging tractor or wheeled vehicle equipped with one or more accessories, such as bulldozer blade, frontal shear, grapple, logging arch, cable winches, hoisting rack, or crane boom, to fell tree; to skid, load, unload, or stack logs; or to pull stumps or clear brush.
Illustrative Examples: Log Hauler; Logging Tractor Operator; Skidder Driver

45-4023 Log Graders and Scalers
Grade logs or estimate the marketable content or value of logs or pulpwood in sorting yards, millpond, log deck, or similar locations. Inspect logs for defects or measure logs to determine volume. Exclude "Purchasing Agents and Buyers, Farm Products" (13-1021).
Illustrative Examples: Timber Estimator; Landing Scaler

45-4029 Logging Workers, All Other
All logging workers not listed separately.
Illustrative Examples: Barker; Cable Hooker; Rigging Slinger

Construction and Extraction Occupations

47-1011 First-Line Supervisors/Managers of Construction Trades and Extraction Workers
(Quarry Boss) Directly supervise and coordinate activities of construction or extraction workers.
Illustrative Example: Cement Contractor

Construction Trades Workers

47-2011 Boilermakers
Construct, assemble, maintain, and repair stationary steam boilers and boiler house auxiliaries. Align structures or plate sections to assemble boiler frame tanks or vats, following blueprints. Work involves use of hand and power tools, plumb bobs, levels, wedges, dogs, or turnbuckles. Assist in testing assembled vessels. Direct cleaning of boilers and boiler furnaces. Inspect and repair boiler fittings, such as safety valves, regulators, automatic-control mechanisms, water columns, and auxiliary machines.
Illustrative Examples: Boiler Installer; Boiler Mechanic; Pressure Tester

47-2021 Brickmasons and Blockmasons
Lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures. Exclude "Stonemasons" (47-2022). Classify installers of mortarless segmental concrete masonry wall units in "Landscaping and Groundskeeping Workers" (37-3011).
Illustrative Examples: Adobe Layer; Chimney Builder; Furnace Liner

47-2022 Stonemasons
Build stone structures, such as piers, walls, and abutments. Lay walks, curbstones, or special types of masonry for vats, tanks, and floors.
Illustrative Examples: Granite Setter; Monument Installer; Rock Mason

47-2031 Carpenters
Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Include brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways to control the proper circulation of air through the passageways and to the working places.
Illustrative Examples: Shipwright; Cabinetmaker; Wood Floor Layer

47-2041 Carpet Installers
Lay and install carpet from rolls or blocks on floors. Install padding and trim flooring materials. Exclude "Floor Layers, Except Carpet, Wood, and Hard Tiles" (47-2042).
Illustrative Examples: Floor Coverer; Rug Layer

47-2042 Floor Layers, Except Carpet, Wood, and Hard Tiles
Apply blocks, strips, or sheets of shock-absorbing, sound-deadening, or decorative coverings to floors.
Illustrative Examples: Composition Floor Setter; Linoleum Layer; Soft Tile Setter

47-2043 Floor Sanders and Finishers
Scrape and sand wooden floors to smooth surfaces using floor scraper and floor sanding machine, and apply coats of finish.
Illustrative Examples: Floor Sanding Machine Operator; Floor Surfacer; Hardwood Finisher

47-2044 Tile and Marble Setters
Apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.
Illustrative Examples: Ceramic Tile Installer; Hard Tile Setter; Marble Installer

47-2051 Cement Masons and Concrete Finishers
Smooth and finish surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids; use saws to cut expansion joints. Classify installers of mortarless segmental concrete masonry wall units in "Landscaping and Groundskeeping Workers. (37-3011).
Illustrative Examples: Curb Builder; Concrete Floor Installer

47-2053 Terrazzo Workers and Finishers
Apply a mixture of cement, sand, pigment, or marble chips to floors, stairways, and cabinet fixtures to fashion durable and decorative surfaces.
Illustrative Example: Artificial Marble Worker

47-2061 Construction Laborers
Perform tasks involving physical labor at building, highway, and heavy construction projects, tunnel and shaft excavations, and demolition sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, clean up rubble and debris, and remove asbestos, lead, and other hazardous waste materials. May assist other craft workers. Exclude construction laborers who primarily assist a particular craft worker, and classify them under "Helpers, Construction Trades" (47-3011 through 47-3016).
Illustrative Examples: Air Hammer Operator; Asphalt Patcher; Construction Craft Laborer

47-2071 Paving, Surfacing, and Tamping Equipment Operators
Operate equipment used for applying concrete, asphalt, or other materials to road beds, parking lots, or airport runways and taxiways, or equipment used for tamping gravel, dirt, or other materials. Include concrete and asphalt paving machine operators, form tampers, tamping machine operators, and stone spreader operators.
Illustrative Examples: Asphalt Spreader Operator; Black Top Machine Operator; Road Grader

47-2072 Pile-Driver Operators
Operate pile drivers mounted on skids, barges, crawler treads, or locomotive cranes to drive pilings for retaining walls, bulkheads, and foundations of structures, such as buildings, bridges, and piers.
Illustrative Examples: Nozzle Operator; Pile Driver Engineer

47-2073 Operating Engineers and Other Construction Equipment Operators
Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties. Exclude "Crane and Tower Operators" (53-7021) and equipment operators who work in extraction or other non-construction industries.
Illustrative Examples: Bulldozer Operator; Power Grader Operator; Steam Shovel Operator

47-2081 Drywall and Ceiling Tile Installers
(Lather) Apply plasterboard or other wallboard to ceilings or interior walls of buildings. Apply or mount acoustical tiles or blocks, strips, or sheets of shock-absorbing materials to ceilings and walls of buildings to reduce or reflect sound. Materials may be of decorative quality. Include lathers who fasten wooden, metal, or rockboard lath to walls, ceilings or partitions of buildings to provide support base for plaster, fire-proofing, or acoustical material. Exclude "Carpenters" (47-2031), and "Tile and Marble Setters" (47-2044).
Illustrative Examples: Acoustical Carpenter; Sheet Rock Hanger

47-2082 Tapers
Seal joints between plasterboard or other wallboard to prepare wall surface for painting or papering.
Illustrative Examples: Sheet Rock Taper; Wall Taper

47-2111 Electricians
Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Exclude "Security and Fire Alarm Systems Installers" (49-2098).
Illustrative Examples: Electrical Sign Servicer; House Wirer; Chief Electrician

47-2121 Glaziers
Install glass in windows, skylights, store fronts, and display cases, or on surfaces, such as building fronts, interior walls, ceilings, and tabletops.
Illustrative Examples: Window Glass Installer; Plate Glass Installer; Stained Glass Glazier

47-2131 Insulation Workers, Floor, Ceiling, and Wall
Line and cover structures with insulating materials. May work with batt, roll, or blown insulation materials.
Illustrative Examples: Composition Weatherboard Installer; Fiberglass Insulation Installer; Insulation Blower

47-2132 Insulation Workers, Mechanical
Apply insulating materials to pipes or ductwork, or other mechanical systems in order to help control and maintain temperature.
Illustrative Examples: Boiler Coverer; Pipe Coverer

47-2141 Painters, Construction and Maintenance
Paint walls, equipment, buildings, bridges, and other structural surfaces, using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency. Exclude "Paperhangers" (47-2142).
Illustrative Examples: Bridge Painter; Traffic Line Painter; House Painter

47-2142 Paperhangers
Cover interior walls and ceilings of rooms with decorative wallpaper or fabric, or attach advertising posters on surfaces, such as walls and billboards. Duties include removing old materials from surface to be papered.
Illustrative Examples: Billboard Poster; Wallpaperer

47-2151 Pipelayers
Lay pipe for storm or sanitation sewers, drains, and water mains. Perform any combination of the following tasks: grade trenches or culverts, position pipe, or seal joints. Exclude "Welders, Cutters, Solderers, and Brazers" (51-4121).
Illustrative Examples: Trench Pipe Layer; Pipe Liner; Sewer Connector

47-2152 Plumbers, Pipefitters, and Steamfitters
Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems.
Illustrative Examples: Gas Line Installer; Hot Water Heater Installer; Sprinkling System Installer

47-2161 Plasterers and Stucco Masons
Apply interior or exterior plaster, cement, stucco, or similar materials. May also set ornamental plaster.
Illustrative Examples: Dry Plasterer; Stucco Worker; Ornamental Plasterer

47-2171 Reinforcing Iron and Rebar Workers
Position and secure steel bars or mesh in concrete forms in order to reinforce concrete. Use a variety of fasteners, rod-bending machines, blowtorches, and hand tools. Include rod busters.
Illustrative Examples: Reinforcing Rod Layer; Rod Buster; Steel Tier

47-2181 Roofers
Cover roofs of structures with shingles, slate, asphalt, aluminum, wood, and related materials. May spray roofs, sidings, and walls with material to bind, seal, insulate, or soundproof sections of structures.
Illustrative Examples: Slater; Hot Tar Roofer; Terra Cotta Roofer

47-2211 Sheet Metal Workers
(Duct Installer, Metal) Fabricate, assemble, install, and repair sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings. Work may involve any of the following: setting up and operating fabricating machines to cut, bend, and straighten sheet metal; shaping metal over anvils, blocks, or forms using hammer; operating soldering and welding equipment to join sheet metal parts; inspecting, assembling, and smoothing seams and joints of burred surfaces. Include sheet metal duct installers who install prefabricated sheet metal ducts used for heating, air conditioning, or other purposes.
Illustrative Example: Tinsmith

47-2221 Structural Iron and Steel Workers
Raise, place, and unite iron or steel girders, columns, and other structural members to form completed structures or structural frameworks. May erect metal storage tanks and assemble prefabricated metal buildings. Exclude "Reinforcing Iron and Rebar Workers" (47-2171).
Illustrative Examples: Bolter; Guard Rail Installer; Construction Ironworker

Helpers, Construction Trades

47-3011 Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters
Help brickmasons, blockmasons, stonemasons, or tile and marble setters by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist brickmasons, blockmasons, and stonemasons or tile and marble setters, and classify them under "Construction Laborers" (47-2061).
Illustrative Examples: Brick Carrier; Brick Washer; Tile Layers Helper

47-3012 Helpers--Carpenters
Help carpenters by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist carpenters, and classify them under "Construction Laborers" (47-2061).
Illustrative Examples: Carpenter's Mate; Joiner's Helper; Cabinetmaker's Helper

47-3013 Helpers--Electricians
Help electricians by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist electricians, and classify them under "Construction Laborers" (47-2061).
Illustrative Examples: Utilities Ground Worker; Electrician's Assistant

47-3014 Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons
Help painters, paperhangers, plasterers, or stucco masons by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist painters, paperhangers, plasterers, or stucco masons, and classify them under "Construction Laborers" (47-2061).
Illustrative Example: Plaster Tender

47-3015 Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters
Help plumbers, pipefitters, steamfitters, or pipelayers by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist plumbers, pipefitters, steamfitters, or pipelayers, and classify them under "Construction Laborers" (47-2061).
Illustrative Examples: Pipe Cutter; Plumber's Assistant; Water Main Installer's Helper

47-3016 Helpers--Roofers
Help roofers by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist roofers, and classify them under "Construction Laborers" (47-2061).
Illustrative Example: Roofer's Assistant

47-3019 Helpers, Construction Trades, All Other
All construction trades helpers not listed separately.
Illustrative Examples: Cement Mixer; Glazier's Helper; Surveyor's Helper

Other Construction and Related Workers

47-4011 Construction and Building Inspectors
Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.
Illustrative Examples: Highway Inspector; Electrical Inspector; Architectural Inspector

47-4021 Elevator Installers and Repairers
(Escalator Installer) Assemble, install, repair, or maintain electric or hydraulic freight or passenger elevators, escalators, or dumbwaiters.
Illustrative Examples: Elevator Mechanic; Hydraulic Elevator Constructor

47-4031 Fence Erectors
Erect and repair metal and wooden fences and fence gates around highways, industrial establishments, residences, or farms, using hand and power tools.
Illustrative Examples: Wire Fence Builder; Wood Fence Installer

47-4041 Hazardous Materials Removal Workers
Identify, remove, pack, transport, or dispose of hazardous materials, including asbestos, lead-based paint, waste oil, fuel, transmission fluid, radioactive materials, contaminated soil, etc. Specialized training and certification in hazardous materials handling or a confined entry permit are generally required. May operate earth-moving equipment or trucks.
Illustrative Examples: Asbestos Remover; Irradiated Fuel Handler; Hazardous Waste Remover

47-4051 Highway Maintenance Workers
Maintain highways, municipal and rural roads, airport runways, and rights-of-way. Duties include patching broken or eroded pavement, repairing guard rails, highway markers, and snow fences. May also mow or clear brush from along road or plow snow from roadway. Exclude "Tree Trimmers and Pruners" (37-3013).
Illustrative Examples: Snow Plow Operator; Road Patcher; Road Sign Installer

47-4061 Rail-Track Laying and Maintenance Equipment Operators
Lay, repair, and maintain track for standard or narrow-gauge railroad equipment used in regular railroad service or in plant yards, quarries, sand and gravel pits, and mines. Include ballast cleaning machine operators and railroad bed tamping machine operators.
Illustrative Examples: Ballast Cleaning Machine Operator; Track Surfacing Machine Operator; Track Dresser

47-4071 Septic Tank Servicers and Sewer Pipe Cleaners
Clean and repair septic tanks, sewer lines, or drains. May patch walls and partitions of tank, replace damaged drain tile, or repair breaks in underground piping.
Illustrative Examples: Sewage Screen Operator; Septic Tank Cleaner; Electric Sewer Cleaning Machine Operator

47-4091 Segmental Pavers
Lay out, cut, and paste segmental paving units. Include installers of bedding and restraining materials for the paving units.
Illustrative Examples: Concrete Paver Installer; Interlocking Concrete Pavement Installer

47-4099 Construction and Related Workers, All Other
All construction and related workers not listed separately.
Illustrative Examples: Aluminum Pool Installer; Building Wrecker; Waterproofer

Extraction Workers

47-5011 Derrick Operators, Oil and Gas
Rig derrick equipment and operate pumps to circulate mud through drill hole.
Illustrative Examples: Rotary Derrick Operator; Well Service Derrick Worker

47-5012 Rotary Drill Operators, Oil and Gas
Set up or operate a variety of drills to remove petroleum products from the earth and to find and remove core samples for testing during oil and gas exploration.
Illustrative Examples: Cable Tool Operator; Core Driller; Well Driller

47-5013 Service Unit Operators, Oil, Gas, and Mining
(Fishing Tool Operator) Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools, or other obstructions from drilling wells. May also perform similar services in mining exploration operations. Include fishing-tool technicians.
Illustrative Example: Well Cleaner

47-5021 Earth Drillers, Except Oil and Gas
(Auger Operator) Operate a variety of drills--such as rotary, churn, and pneumatic--to tap sub-surface water and salt deposits, to remove core samples during mineral exploration or soil testing, and to facilitate the use of explosives in mining or construction. May use explosives. Include horizontal and earth boring machine operators.
Illustrative Examples: Earth Boring Machine Operator; Tunneling Machine Operator

47-5031 Explosives Workers, Ordnance Handling Experts, and Blasters
Place and detonate explosives to demolish structures or to loosen, remove, or displace earth, rock, or other materials. May perform specialized handling, storage, and accounting procedures. Include seismograph shooters. Exclude "Earth Drillers, Except Oil and Gas" (47-5021) who may also work with explosives.
Illustrative Examples: Dynamiter; Explosives Expert; Blast Setter

47-5041 Continuous Mining Machine Operators
Operate self-propelled mining machines that rip coal, metal and nonmetal ores, rock, stone, or sand from the face and load it onto conveyors or into shuttle cars in a continuous operation.

47-5042 Mine Cutting and Channeling Machine Operators
Operate machinery--such as longwall shears, plows, and cutting machines--to cut or channel along the face or seams of coal mines, stone quarries, or other mining surfaces to facilitate blasting, separating, or removing minerals or materials from mines or from the earth's surface. Include shale planers.
Illustrative Examples: Coal Cutter; Long Wall Mining Machine Tender; Shale Planer Operator

47-5049 Mining Machine Operators, All Other
All mining machine operators not listed separately.
Illustrative Examples: Extraction Machine Operator; Hydraulic Operator; Rock Duster

47-5051 Rock Splitters, Quarry
Separate blocks of rough dimension stone from quarry mass using jackhammer and wedges.
Illustrative Examples: Quarry Plug and Feather Driller; Rock Breaker

47-5061 Roof Bolters, Mining
Operate machinery to install roof support bolts in underground mine.

47-5071 Roustabouts, Oil and Gas
Assemble or repair oil field equipment using hand and power tools. Perform other tasks as needed.
Illustrative Examples: Connection Worker; Oil Field Laborer

47-5081 Helpers--Extraction Workers
Help extraction craft workers, such as earth drillers, blasters and explosives workers, derrick operators, and mining machine operators, by performing duties of lesser skill. Duties include supplying equipment or cleaning work area. Exclude apprentice workers and report them with the appropriate extraction trade occupation (47-5011 through 47-5099).
Illustrative Examples: Blaster's Helper; Tunnel Mucker; Mining Helper

47-5099 Extraction Workers, All Other
All extraction workers not listed separately.
Illustrative Examples: Chute Operator; Coal Digger; Sandfill Operator

Installation, Maintenance, and Repair Occupations

49-1011 First-Line Supervisors/Managers of Mechanics, Installers, and Repairers
Supervise and coordinate the activities of mechanics, installers, and repairers. Exclude team or work leaders.
Illustrative Examples: Marine Service Manager; Ground Crew Chief; Engine Repair Supervisor

Electrical and Electronic Equipment Mechanics, Installers, and Repairers

49-2011 Computer, Automated Teller, and Office Machine Repairers
(Cash Register Servicer) Repair, maintain, or install computers, word processing systems, automated teller machines, and electronic office machines, such as duplicating and fax machines.
Illustrative Examples: ATM Specialist; Computer Installer

49-2021 Radio Mechanics
Test or repair mobile or stationary radio transmitting and receiving equipment and two-way radio communications systems used in ship-to-shore communications and found in service and emergency vehicles.
Illustrative Examples: Radio Electrician; Radio Rigger

49-2022 Telecommunications Equipment Installers and Repairers, Except Line Installers
Set-up, rearrange, or remove switching and dialing equipment used in central offices. Service or repair telephones and other communication equipment on customers' property. May install equipment in new locations or install wiring and telephone jacks in buildings under construction.
Illustrative Examples: Central Office Equipment Installer; Electronics Installer; Exchange Mechanic

49-2091 Avionics Technicians
Install, inspect, test, adjust, or repair avionics equipment, such as radar, radio, navigation, and missile control systems in aircraft or space vehicles.
Illustrative Examples: Aircraft Electrician; Automatic Pilot Mechanic; Missile Facilities Repairer

49-2092 Electric Motor, Power Tool, and Related Repairers
Repair, maintain, or install electric motors, wiring, or switches.
Illustrative Examples: Armature Winder; Generator Mechanic; Electric Golf Cart Repairer

49-2093 Electrical and Electronics Installers and Repairers, Transportation Equipment
Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment. Exclude "Avionics Technicians" (49-2091) and "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096).
Illustrative Example: Locomotive Electrician

49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment
(Radar Technician) Repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas. Exclude "Avionics Technicians" (49-2091), "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096), and "Electrical and Electronics Installers and Repairers, Transportation Equipment" (49-2093).
Illustrative Examples: Missile Pad Mechanic; Amplifier Mechanic

49-2095 Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
Inspect, test, repair, or maintain electrical equipment in generating stations, substations, and in-service relays.
Illustrative Examples: Powerhouse Electrician; Relay Technician; Power Transformer Repairer

49-2096 Electronic Equipment Installers and Repairers, Motor Vehicles
Install, diagnose, or repair communications, sound, security, or navigation equipment in motor vehicles.
Illustrative Examples: Auto Phone Installer; Automotive Electrician

49-2097 Electronic Home Entertainment Equipment Installers and Repairers
Repair, adjust, or install audio or television receivers, stereo systems, camcorders, video systems, or other electronic home entertainment equipment.
Illustrative Examples: Electric Organ Technician; Television Mechanic; Satellite Dish Installer

49-2098 Security and Fire Alarm Systems Installers
Install, program, maintain, and repair security and fire alarm wiring and equipment. Ensure that work is in accordance with relevant codes. Exclude "Electricians" (47-2111) who do a broad range of electrical wiring.
Illustrative Examples: Fire Alarm Installer; Burglar Alarm Mechanic

Vehicle and Mobile Equipment Mechanics, Installers, and Repairers

49-3012 Aircraft Mechanics and Service Technicians, FAA Certified
Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. FAA certification required. Include FAA certified helicopter and aircraft engine specialists.

49-3013 Aircraft Mechanics and Service Technicians, not FAA Certified
Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. Include helicopter and aircraft engine specialists.

49-3021 Automotive Body and Related Repairers
Repair and refinish automotive vehicle bodies and straighten vehicle frames. Exclude "Painters, Transportation Equipment" (51-9122) and "Automotive Glass Installers and Repairers" (49-3022).
Illustrative Examples: Auto Body Customizer; Collision Mechanic; Frame Straightener

49-3022 Automotive Glass Installers and Repairers
Replace or repair broken windshields and window glass in motor vehicles.
Illustrative Examples: Auto Glass Mechanic; Windshield Installer; Auto Glass Fitter

49-3023 Automotive Service Technicians and Mechanics
Diagnose, adjust, repair, or overhaul automotive vehicles. Exclude "Automotive Body and Related Repairers" (49-3021), "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031), and "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096).
Illustrative Examples: Auto Brake Mechanic; Fuel Injection Servicer; Auto Transmission Specialist

49-3031 Bus and Truck Mechanics and Diesel Engine Specialists
Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines. Include mechanics working primarily with automobile diesel engines.
Illustrative Examples: Tractor Trailer Mechanic; Diesel Mechanic; Farm Equipment Engine Mechanic

49-3041 Farm Equipment Mechanics
Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems. Exclude "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).
Illustrative Examples: Irrigation Equipment Mechanic; Dairy Equipment Installer

49-3042 Mobile Heavy Equipment Mechanics, Except Engines
Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining. Exclude "Rail Car Repairers" (49-3043) and "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).
Illustrative Examples: Construction Equipment Mechanic; Fork Lift Mechanic; Bulldozer Mechanic

49-3043 Rail Car Repairers
(Subway Car Mechanic) Diagnose, adjust, repair, or overhaul railroad rolling stock, mine cars, or mass transit rail cars. Exclude "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).
Illustrative Examples: Streetcar Repairer; Mine Car Mechanic

49-3051 Motorboat Mechanics
Repair and adjust electrical and mechanical equipment of gasoline or diesel powered inboard or inboard-outboard boat engines. Exclude "Diesel Engine Specialists" (49-3031).
Illustrative Example: Outboard Motor Mechanic

49-3052 Motorcycle Mechanics
Diagnose, adjust, repair, or overhaul motorcycles, scooters, mopeds, dirt bikes, or similar motorized vehicles.
Illustrative Examples: Motor Scooter Mechanic; Motorcycle Repairer

49-3053 Outdoor Power Equipment and Other Small Engine Mechanics
Diagnose, adjust, repair, or overhaul small engines used to power lawn mowers, chain saws, and related equipment.
Illustrative Examples: Chainsaw Mechanic; Lawn Mower Repairer; Snowmobile Mechanic

49-3091 Bicycle Repairers
Repair and service bicycles.
Illustrative Example: Bicycle Mechanic

49-3092 Recreational Vehicle Service Technicians
Diagnose, inspect, adjust, repair, or overhaul recreational vehicles including travel trailers. May specialize in maintaining gas, electrical, hydraulic, plumbing, or chassis/towing systems as well as repairing generators, appliances, and interior components. Include workers who perform customized van conversions. Exclude "Automotive Service Technicians and Mechanics" (49-3023) and "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031) who also work on recreation vehicles.
Illustrative Example: RV Mechanic

49-3093 Tire Repairers and Changers
(Tire Balancer) Repair and replace tires.
Illustrative Example: Tire Fixer

Other Installation, Maintenance, and Repair Occupations

49-9011 Mechanical Door Repairers
Install, service, or repair opening and closing mechanisms of automatic doors and hydraulic door closers. Include garage door mechanics.
Illustrative Example: Automatic Door Mechanic

49-9012 Control and Valve Installers and Repairers, Except Mechanical Door
(Electric Meter Installer) Install, repair, and maintain mechanical regulating and controlling devices, such as electric meters, gas regulators, thermostats, safety and flow valves, and other mechanical governors.
Illustrative Examples: Gas Meter Prover; Thermostat Repairer

49-9021 Heating, Air Conditioning, and Refrigeration Mechanics and Installers
Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.
Illustrative Examples: Furnace Converter; Gas Furnace Installer; Oil Burner Repairer

49-9031 Home Appliance Repairers
Repair, adjust, or install all types of electric or gas household appliances, such as refrigerators, washers, dryers, and ovens.
Illustrative Examples: Window Air Conditioner Mechanic; Vacuum Cleaner Repairer; Washing Machine Installer

49-9041 Industrial Machinery Mechanics
Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems. Exclude "Millwrights" (49-9044), "Mobile Heavy Equipment Mechanics, Except Engines" (49-3042), and "Maintenance Workers, Machinery" (49-9043) who perform only routine tasks.
Illustrative Examples: Conveyor Belt Installer; Turbine Mechanic; Hydroelectric Machinery Mechanic

49-9042 Maintenance and Repair Workers, General
(Maintenance Mechanic) Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. Exclude "Maintenance Workers, Machinery" (49-9043).
Illustrative Examples: Building Maintenance Repairer; Trouble Shooting Mechanic; Mechanical Adjuster

49-9043 Maintenance Workers, Machinery
(Belt Repairer) Lubricate machinery, change parts, or perform other routine machinery maintenance. Exclude "Maintenance and Repair Workers, General" (49-9042).
Illustrative Examples: Grease Packer; Machine Oiler

49-9044 Millwrights
Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.
Illustrative Examples: Machine Erector; Machine Rigger; Machinery Dismantler

49-9045 Refractory Materials Repairers, Except Brickmasons
Build or repair furnaces, kilns, cupolas, boilers, converters, ladles, soaking pits, ovens, etc., using refractory materials.
Illustrative Examples: Bondactor Machine Operator; Kiln Door Repairer

49-9051 Electrical Power-Line Installers and Repairers
Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers. Exclude "Electrical and Electronics Repairers, Powerhouse, Substation, and Relay" (49-2095).
Illustrative Examples: Pole Climber; High Tension Tester; Electric Utility Wire Stretcher

49-9052 Telecommunications Line Installers and Repairers
String and repair telephone and television cable, including fiber optics and other equipment for transmitting messages or television programming.
Illustrative Examples: Telecommunications Cable Splicer; Telecommunications Wire Stretcher; Cable Television Installer

49-9061 Camera and Photographic Equipment Repairers
Repair and adjust cameras and photographic equipment, including commercial video and motion picture camera equipment.
Illustrative Examples: Camera Machinist; Photographic Equipment Technician

49-9062 Medical Equipment Repairers
Test, adjust, or repair biomedical or electromedical equipment.
Illustrative Examples: Biomedical Equipment Technician; Hearing Aid Mechanic; Surgical Instrument Mechanic

49-9063 Musical Instrument Repairers and Tuners
Repair percussion, stringed, reed, or wind instruments. May specialize in one area, such as piano tuning. Exclude "Electronic Home Entertainment Equipment Installers and Repairers" (49-2097) who repair electrical and electronic musical instruments.
Illustrative Examples: Piano Tuner; Violin Repairer; Tone Regulator

49-9064 Watch Repairers
(Horologist) Repair, clean, and adjust mechanisms of timing instruments, such as watches and clocks. Include watchmakers.
Illustrative Examples: Watch and Clock Crowner; Watchmaker

49-9069 Precision Instrument and Equipment Repairers, All Other
All precision instrument and equipment repairers not listed separately.
Illustrative Examples: Laboratory Equipment Installer; Gyro Mechanic; Meteorological Equipment Repairer

49-9091 Coin, Vending, and Amusement Machine Servicers and Repairers
Install, service, adjust, or repair coin, vending, or amusement machines including video games, juke boxes, pinball machines, or slot machines.
Illustrative Examples: Cigarette Machine Mechanic; Slot Machine Mechanic; Video Game Mechanic

49-9092 Commercial Divers
Work below surface of water, using scuba gear to inspect, repair, remove, or install equipment and structures. May use a variety of power and hand tools, such as drills, sledgehammers, torches, and welding equipment. May conduct tests or experiments, rig explosives, or photograph structures or marine life. Exclude "Fishers and Related Fishing Workers" (45-3011), "Athletes and Sports Competitors" (27-2021), and "Police and Sheriff's Patrol Officers" (33-3051).
Illustrative Examples: Marine Diver; Scuba Diver; Skin Diver

49-9093 Fabric Menders, Except Garment
Repair tears, holes, and other defects in fabrics, such as draperies, linens, parachutes, and tents.
Illustrative Examples: Canvas Repairer; Bag Repairer; Seat Mender

49-9094 Locksmiths and Safe Repairers
Repair and open locks; make keys; change locks and safe combinations; and install and repair safes.
Illustrative Examples: Key Maker; Vault Service Mechanic; Lock Expert

49-9095 Manufactured Building and Mobile Home Installers
Move or install mobile homes or prefabricated buildings.
Illustrative Examples: Mobile Home Mechanic; Housetrailer Servicer

49-9096 Riggers
Set up or repair rigging for construction projects, manufacturing plants, logging yards, ships and shipyards, or for the entertainment industry.
Illustrative Examples: Acrobatic Rigger; Rigging Slinger; Yard Rigger

49-9097 Signal and Track Switch Repairers
Install, inspect, test, maintain, or repair electric gate crossings, signals, signal equipment, track switches, section lines, or intercommunications systems within a railroad system.
Illustrative Examples: Signal Mechanic; Signal Maintainer; Third Rail Installer

49-9098 Helpers--Installation, Maintenance, and Repair Workers
Help installation, maintenance, and repair workers in maintenance, parts replacement, and repair of vehicles, industrial machinery, and electrical and electronic equipment. Perform duties, such as furnishing tools, materials, and supplies to other workers; cleaning work area, machines, and tools; and holding materials or tools for other workers.
Illustrative Examples: Mechanic's Helper; Diver's Helper; Blacksmith's Helper

49-9099 Installation, Maintenance, and Repair Workers, All Other
All mechanical, installation, and repair workers and helpers not listed separately.
Illustrative Examples: Blacksmith; Cooper; Gunsmith

Production Occupations

51-1011 First-Line Supervisors/Managers of Production and Operating Workers
Supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Exclude team or work leaders.
Illustrative Examples: Laundromat Manager; Station Chief; Assembly Line Supervisor

Assemblers and Fabricators

51-2011 Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
Assemble, fit, fasten, and install parts of airplanes, space vehicles, or missiles, such as tails, wings, fuselage, bulkheads, stabilizers, landing gear, rigging and control equipment, or heating and ventilating systems.
Illustrative Examples: Aircraft Riveter; Fuselage Framer; Skin Installer

51-2021 Coil Winders, Tapers, and Finishers
Wind wire coils used in electrical components, such as resistors and transformers, and in electrical equipment and instruments, such as field cores, bobbins, armature cores, electrical motors, generators, and control equipment.
Illustrative Examples: Coil Builder; Motor Winder; Wire Coiler

51-2022 Electrical and Electronic Equipment Assemblers
Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.
Illustrative Examples: Anode Builder; Battery Builder; Industrial Equipment Wirer

51-2023 Electromechanical Equipment Assemblers
Assemble or modify electromechanical equipment or devices, such as servomechanisms, gyros, dynamometers, magnetic drums, tape drives, brakes, control linkage, actuators, and appliances.
Illustrative Examples: Appliance Assembler; Vending Machine Assembler

51-2031 Engine and Other Machine Assemblers
(Motor Installer) Construct, assemble, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing.
Illustrative Examples: Machine Builder; Turbine Assembler

51-2041 Structural Metal Fabricators and Fitters
Fabricate, lay out, position, align, and fit parts of structural metal products.
Illustrative Examples: Manufacturing Ornamental Metal Worker; Metal Box Maker; Protector Plate Attacher

51-2091 Fiberglass Laminators and Fabricators
Laminate layers of fiberglass on molds to form boat decks and hulls, bodies for golf carts, automobiles, or other products.
Illustrative Examples: Fiberglass Ski Maker; Fiberglass Boat Builder; Golf Cart Maker

51-2092 Team Assemblers
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. Exclude assemblers (51-2011 through 51-2099) who continuously perform the same task.

51-2093 Timing Device Assemblers, Adjusters, and Calibrators
Perform precision assembling or adjusting, within narrow tolerances, of timing devices, such as watches, clocks, or chronometers. Exclude "Watch Repairers" (49-9064).
Illustrative Examples: Chronometer Assembler; Hair Spring Truer; Escapement Matcher

51-2099 Assemblers and Fabricators, All Other
All assemblers and fabricators not listed separately.
Illustrative Examples: Barrel Raiser; Automobile Assembler, except engines; Doll Maker

Food Processing Workers

51-3011 Bakers
Mix and bake ingredients according to recipes to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods. Include pastry chefs in restaurants and hotels with "Chefs and Head Cooks" (35-1011).
Illustrative Examples: Cake Maker; Head Baker; Pastry Finisher

51-3021 Butchers and Meat Cutters
Cut, trim, or prepare consumer-sized portions of meat for use or sale in retail establishments.
Illustrative Examples: Carver; Meat Department Manager; Cleaver

51-3022 Meat, Poultry, and Fish Cutters and Trimmers
Use hand tools to perform routine cutting and trimming of meat, poultry, and fish.
Illustrative Examples: Calf Skinner; Eviscerator; Filleter

51-3023 Slaughterers and Meat Packers
Work in slaughtering, meat packing, or wholesale establishments performing precision functions involving the preparation of meat. Work may include specialized slaughtering tasks, cutting standard or premium cuts of meat for marketing, making sausage, or wrapping meats. Exclude "Meat, Poultry, and Fish Cutters and Trimmers" (51-3022) who perform routine, lower-skilled meat cutting.
Illustrative Examples: Hog Sticker; Shactor; Beef Splitter

51-3091 Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
Operate or tend food or tobacco roasting, baking, or drying equipment, including hearth ovens, kiln driers, roasters, char kilns, and vacuum drying equipment.
Illustrative Examples: Coffee Roaster; Smokehouse Worker; Curing Room Worker

51-3092 Food Batchmakers
Set up and operate equipment that mixes or blends ingredients used in the manufacturing of food products. Include candy makers and cheese makers.
Illustrative Examples: Candy Maker; Honey Blender; Peanut Butter Maker

51-3093 Food Cooking Machine Operators and Tenders
Operate or tend cooking equipment, such as steam cooking vats, deep fry cookers, pressure cookers, kettles, and boilers, to prepare food products. Exclude "Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders" (51-3091).
Illustrative Examples: Doughnut Maker; Sausage Cooker; Potato Chip Fryer

Metal Workers and Plastic Workers

51-4011 Computer-Controlled Machine Tool Operators, Metal and Plastic
Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.
Illustrative Examples: Numerical Control Machine Operator; Robot Operator

51-4012 Numerical Tool and Process Control Programmers
Develop programs to control machining or processing of parts by automatic machine tools, equipment, or systems.
Illustrative Examples: Tool Programmer; NC Programmer

51-4021 Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend machines to extrude or draw thermoplastic or metal materials into tubes, rods, hoses, wire, bars, or structural shapes.
Illustrative Examples: Draw Bench Operator; Tube Drawer; Wire Drawing Setter

51-4022 Forging Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend forging machines to taper, shape, or form metal or plastic parts.
Illustrative Examples: Cold Header Operator; Swager Operator; Drop Hammer Operator

51-4023 Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend machines to roll steel or plastic forming bends, beads, knurls, rolls, or plate or to flatten, temper, or reduce gauge of material.
Illustrative Examples: Forming Roll Operator; Rolling Mill Operator; Tubing Machine Operator

51-4031 Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.
Illustrative Examples: Perforator Operator; Crimping Machine Operator; Four Slide Machine Setter

51-4032 Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend drilling machines to drill, bore, ream, mill, or countersink metal or plastic work pieces.
Illustrative Examples: Drill Press Operator; Jewel Cupping Machine Operator; Reaming Press Operator

51-4033 Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend grinding and related tools that remove excess material or burrs from surfaces, sharpen edges or corners, or buff, hone, or polish metal or plastic work pieces.
Illustrative Examples: Barrel Polisher; Jewel Bearing Facer; Metal Filer

51-4034 Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend lathe and turning machines to turn, bore, thread, form, or face metal or plastic materials, such as wire, rod, or bar stock.
Illustrative Examples: Gear Cutter; Screw Machine Operator; Threading Machine Setter

51-4035 Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend milling or planing machines to mill, plane, shape, groove, or profile metal or plastic work pieces.
Illustrative Examples: Broaching Machine Operator; Profiler Operator; Scribing Machine Operator

51-4041 Machinists
Set up and operate a variety of machine tools to produce precision parts and instruments. Include precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, shop mathematics, metal properties, layout, and machining procedures.
Illustrative Examples: Electrical Instrument Maker; Machine Fitter

51-4051 Metal-Refining Furnace Operators and Tenders
(Smelter) Operate or tend furnaces, such as gas, oil, coal, electric-arc or electric induction, open-hearth, or oxygen furnaces, to melt and refine metal before casting or to produce specified types of steel. Exclude "Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic" (51-4191).
Illustrative Examples: Blast Furnace Blower; Bessemer Regulator

51-4052 Pourers and Casters, Metal
Operate hand-controlled mechanisms to pour and regulate the flow of molten metal into molds to produce castings or ingots.
Illustrative Examples: Ingot Header; Ladle Operator; Steel Pourer

51-4061 Model Makers, Metal and Plastic
Set up and operate machines, such as lathes, milling and engraving machines, and jig borers to make working models of metal or plastic objects. Include template makers.
Illustrative Examples: Jig and Fixture Builder; Mandrel Maker; Mock Up Maker

51-4062 Patternmakers, Metal and Plastic
Lay out, machine, fit, and assemble castings and parts to metal or plastic foundry patterns, core boxes, or match plates.
Illustrative Examples: Pattern Fitter; Stencil Cutter

51-4071 Foundry Mold and Coremakers
Make or form wax or sand cores or molds used in the production of metal castings in foundries.
Illustrative Examples: Core Setter; Mold Closer; Dry Sand Molder

51-4072 Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.
Illustrative Examples: Centrifugal Casting Machine Operator; Injection Molding Machine Setter; Core Mounter

51-4081 Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend more than one type of cutting or forming machine tool or robot.
Illustrative Examples: Machine Tool Operator; Combination Machine Tool Setter; Metal and Plastic Transfer Machine Operator

51-4111 Tool and Die Makers
Analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools.
Illustrative Examples: Die Sinker; Die Finisher; Sawsmith

51-4121 Welders, Cutters, Solderers, and Brazers
Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.
Illustrative Examples: Acetylene Burner; Arc Welder; Blow Torch Operator

51-4122 Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
(Laser Cutter Machine Operator) Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Include workers who operate laser cutters or laser-beam machines.
Illustrative Examples: Electron Beam Welder Setter; Laser-Beam Machine Operator; Ultrasonic Welding Machine Operator

51-4191 Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend heating equipment, such as heat-treating furnaces, flame-hardening machines, induction machines, soaking pits, or vacuum equipment to temper, harden, anneal, or heat-treat metal or plastic objects.
Illustrative Examples: Metal & Plastic Annealer; Metal & Plastic Temperer; Induction Machine Setter

51-4192 Lay-Out Workers, Metal and Plastic
Lay out reference points and dimensions on metal or plastic stock or workpieces, such as sheets, plates, tubes, structural shapes, castings, or machine parts, for further processing. Include shipfitters.
Illustrative Example: Location and Measurement Technician

51-4193 Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend plating or coating machines to coat metal or plastic products with chromium, zinc, copper, cadmium, nickel, or other metal to protect or decorate surfaces. Include electrolytic processes.
Illustrative Examples: Anodizer; Electroplater; Galvanizer

51-4194 Tool Grinders, Filers, and Sharpeners
Perform precision smoothing, sharpening, polishing, or grinding of metal objects.
Illustrative Examples: Die Polisher; Precision Honer; Tool Maintenance Worker

51-4199 Metal Workers and Plastic Workers, All Other
All metalworkers and plastic workers not listed separately.
Illustrative Examples: Balancing Machine Operator; Film Casting Operator; Nail Making Machine Setter

Printing Workers

51-5011 Bindery Workers
(Hand Bindery Worker) Set up or operate binding machines that produce books and other printed materials. Include hand bindery workers. Exclude "Bookbinders" (51-5012).
Illustrative Examples: Book Coverer; Stitching Machine Operator; Bookbinding Machine Operator

51-5012 Bookbinders
Perform highly skilled hand finishing operations, such as grooving and lettering to bind books.
Illustrative Examples: Book Finisher; Book Mender

51-5021 Job Printers
Set type according to copy; operate press to print job order; and read proof for errors and clarity of impression, and correct imperfections. Job printers are often found in small establishments where work combines several job skills.
Illustrative Examples: Job Press Operator; Apprentice Job Printer

51-5022 Prepress Technicians and Workers
(Compositor, Lithographer) Set up and prepare material for printing presses. Include prepress functions, such as compositing, typesetting, layout, paste-up, camera operating, scanning, film stripping, and photoengraving.
Illustrative Example: Photoengraving Etcher

51-5023 Printing Machine Operators
(Silk Screen Printer) Set up or operate various types of printing machines, such as offset, letterset, intaglio, or gravure presses or screen printers to produce print on paper or other materials.
Illustrative Examples: Bag Printer; Offset Press Operator; Lithoplate Maker

Textile, Apparel, and Furnishings Workers

51-6011 Laundry and Dry-Cleaning Workers
Operate or tend washing or dry-cleaning machines to wash or dry-clean industrial or household articles, such as cloth garments, suede, leather, furs, blankets, draperies, fine linens, rugs, and carpets. Include spotters and dyers of these articles.
Illustrative Examples: Laundry Carpet Cleaner; Silk Spotter; Washing Machine Operator

51-6021 Pressers, Textile, Garment, and Related Materials
Press or shape articles by hand or machine.
Illustrative Examples: Clothes Ironer; Garment Steamer; Steam Operator

51-6031 Sewing Machine Operators
Operate or tend sewing machines to join, reinforce, decorate, or perform related sewing operations in the manufacture of garment or nongarment products.
Illustrative Examples: Blind Stitch Machine Operator; Loop Tacker; Hemmer

51-6041 Shoe and Leather Workers and Repairers
Construct, decorate, or repair leather and leather-like products, such as luggage, shoes, and saddles.
Illustrative Examples: Upper Cutter; Cobbler; Saddle Maker

51-6042 Shoe Machine Operators and Tenders
Operate or tend a variety of machines to join, decorate, reinforce, or finish shoes and shoe parts.
Illustrative Examples: Counter Maker; Lasting Machine Operator; Shoe Archer

51-6051 Sewers, Hand
(Hand Weaver) Sew, join, reinforce, or finish, usually with needle and thread, a variety of manufactured items. Include weavers and stitchers. Exclude "Fabric Menders, Except Garment" (49-9093).
Illustrative Examples: Hand Stitcher; Hosiery Mender

51-6052 Tailors, Dressmakers, and Custom Sewers
Design, make, alter, repair, or fit garments.
Illustrative Examples: Coat Maker; Hand Finisher, Except Toys Shop Tailor

51-6061 Textile Bleaching and Dyeing Machine Operators and Tenders
Operate or tend machines to bleach, shrink, wash, dye, or finish textiles or synthetic or glass fibers.
Illustrative Examples: Bleach Range Operator; Rug Dyer; Skein Yarn Dyer

51-6062 Textile Cutting Machine Setters, Operators, and Tenders
Set up, operate, or tend machines that cut textiles.
Illustrative Examples: Canvas Cutter; Rag Shredder; Welt Trimming Machine Operator

51-6063 Textile Knitting and Weaving Machine Setters, Operators, and Tenders
(Loom Changer) Set up, operate, or tend machines that knit, loop, weave, or draw in textiles. Exclude "Sewing Machine Operators" (51-6031).
Illustrative Examples: Crochet Machine Operator; Ribbing Machine Operator; Looping Machine Operator

51-6064 Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
(Slubber Machine Operator) Set up, operate, or tend machines that wind or twist textiles; or draw out and combine sliver, such as wool, hemp, or synthetic fibers. Include slubber machine and drawing frame operators.
Illustrative Examples: Beamer Operator; Bobbin Doffer; Frame Tender

51-6091 Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
Set up, operate, or tend machines that extrude and form continuous filaments from synthetic materials, such as liquid polymer, rayon, and fiberglass.
Illustrative Examples: Fiber Machine Tender; Box Spinner; Synthetic Filament Spinner

51-6092 Fabric and Apparel Patternmakers
Draw and construct sets of precision master fabric patterns or layouts. May also mark and cut fabrics and apparel.
Illustrative Examples: Pattern Grader; Shoe Patternmaker

51-6093 Upholsterers
Make, repair, or replace upholstery for household furniture or transportation vehicles.
Illustrative Examples: Car Seat Maker; Casket Coverer; Auto Top Mechanic

51-6099 Textile, Apparel, and Furnishings Workers, All Other
All textile, apparel, and furnishings workers not listed separately.
Illustrative Examples: Napper; Carding Machine Operator; Mercerizer

Woodworkers

51-7011 Cabinetmakers and Bench Carpenters
Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products. Exclude "Woodworking Machine Setters, Operators, and Tenders" (51-7041 through 51-7042) who specialize in one or a limited number of machine phases.
Illustrative Examples: Marquetry Worker; Antique Furniture Repairer; Wood Machinist

51-7021 Furniture Finishers
Shape, finish, and refinish damaged, worn, or used furniture or new high-grade furniture to specified color or finish.
Illustrative Examples: Furniture Polisher; Refinisher; Wood Grainer

51-7031 Model Makers, Wood
Construct full-size and scale wooden precision models of products. Include wood jig builders and loft workers.
Illustrative Examples: Wood Jig Builder; Loft Worker

51-7032 Patternmakers, Wood
Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings.
Illustrative Examples: Experimental Wood Mechanic; Wood Die Maker

51-7041 Sawing Machine Setters, Operators, and Tenders, Wood
(Head Sawyer) Set up, operate, or tend wood sawing machines. Include head sawyers.
Illustrative Examples: Crozer Operator; Sawyer; Wood Cutter

51-7042 Woodworking Machine Setters, Operators, and Tenders, Except Sawing
Set up, operate, or tend woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, and wood nailing machines.
Illustrative Examples: Frazer; Molding Sander

51-7099 Woodworkers, All Other
All woodworkers not listed separately.
Illustrative Examples: Wood Carver; Pole Framer; Veneer Taper

Plant and System Operators

51-8011 Nuclear Power Reactor Operators
Control nuclear reactors.
Illustrative Examples: Nuclear Reactor Operator; Power Reactor Operator

51-8012 Power Distributors and Dispatchers
Coordinate, regulate, or distribute electricity or steam.
Illustrative Examples: Feeder Switchboard Operator; Electric and Gas Load Dispatcher; Substation Operator

51-8013 Power Plant Operators
(Auxiliary Equipment Tender) Control, operate, or maintain machinery to generate electric power. Include auxiliary equipment operators. Exclude "Nuclear Power Reactor Operators" (51-8011).
Illustrative Examples: Hydroelectric Operator; Generator Operator; Power House Operator

51-8021 Stationary Engineers and Boiler Operators
Operate or maintain stationary engines, boilers, or other mechanical equipment to provide utilities for buildings or industrial processes. Operate equipment, such as steam engines, generators, motors, turbines, and steam boilers.
Illustrative Examples: Cooling System Operator; Low Pressure Firer; Steam Engineer

51-8031 Water and Liquid Waste Treatment Plant and System Operators
Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or liquid waste.
Illustrative Examples: Disposal Operator; Filtration Plant Operator; Sewage Plant Operator

51-8091 Chemical Plant and System Operators
Control or operate an entire chemical process or system of machines.
Illustrative Examples: Denitrator; Nitrogen Operator; Wash Operator

51-8092 Gas Plant Operators
(Liquefaction Plant Operator) Distribute or process gas for utility companies and others by controlling compressors to maintain specified pressures on main pipelines.
Illustrative Example: Pressure Dispatcher

51-8093 Petroleum Pump System Operators, Refinery Operators, and Gaugers
Control the operation of petroleum refining or processing units. May specialize in controlling manifold and pumping systems, gauging or testing oil in storage tanks, or regulating the flow of oil into pipelines.
Illustrative Examples: Absorption Plant Operator; Gasoline Plant Operator; Oil Refiner

51-8099 Plant and System Operators, All Other
All plant and system operators not listed separately.
Illustrative Examples: Asphalt Plant Operator; Lime Filter Operator; Incinerator Operator

Other Production Occupations

51-9011 Chemical Equipment Operators and Tenders
(Acid Purifier) Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products. Equipment used includes devulcanizers, steam-jacketed kettles, and reactor vessels. Exclude "Chemical Plant and System Operators" (51-8091).
Illustrative Examples: Acetylene Plant Operator; Caustic Purification Operator

51-9012 Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
(Brewmaster) Set up, operate, or tend continuous flow or vat-type equipment; filter presses; shaker screens; centrifuges; condenser tubes; precipitating, fermenting, or evaporating tanks; scrubbing towers; or batch stills. These machines extract, sort, or separate liquids, gases, or solids from other materials to recover a refined product. Include dairy processing equipment operators. Exclude "Chemical Equipment Operators and Tenders" (51-9011).
Illustrative Examples: Dairy Processing Equipment Operator; Distiller

51-9021 Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders
Set up, operate, or tend machines to crush, grind, or polish materials, such as coal, glass, grain, stone, food, or rubber.
Illustrative Examples: Beveling and Edging Machine Operator; Pulverizer Operator

51-9022 Grinding and Polishing Workers, Hand
(Chipper, Glass Finisher) Grind, sand, or polish, using hand tools or hand-held power tools, a variety of metal, wood, stone, clay, plastic, or glass objects. Include chippers, buffers, and finishers.
Illustrative Examples: Metal Sander; Gun Barrel Finisher; Hand Buffer

51-9023 Mixing and Blending Machine Setters, Operators, and Tenders
(Grain Mixer) Set up, operate, or tend machines to mix or blend materials, such as chemicals, tobacco, liquids, color pigments, or explosive ingredients. Exclude "Food Batchmakers" (51-3092).
Illustrative Examples: Batch Maker; Clay Mixer; Tumbler Tender

51-9031 Cutters and Trimmers, Hand
Use hand tools or hand-held power tools to cut and trim a variety of manufactured items, such as carpet, fabric, stone, glass, or rubber.
Illustrative Examples: Buttonhole Maker; Fur Trimmer; Thread Clipper

51-9032 Cutting and Slicing Machine Setters, Operators, and Tenders
(Shear Operator) Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material. Exclude "Woodworking Machine Setters, Operators, and Tenders" (51-7041 through 51-7042), "Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic" (51-4031), and "Textile Cutting Machine Setters, Operators, and Tenders" (51-6062).
Illustrative Examples: Bias Machine Operator; Slate Trimmer

51-9041 Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
(Brick or Block Maker) Set up, operate, or tend machines, such as glass forming machines, plodder machines, and tuber machines, to shape and form products, such as glassware, food, rubber, soap, brick, tile, clay, wax, tobacco, or cosmetics. Exclude "Paper Goods Machine Setters, Operators, and Tenders" (51-9196) and "Shoe Machine Operators and Tenders" (51-6042).
Illustrative Examples: Briquette Maker; Cigarette Machine Operator; Rubber Laminating Machine Operator

51-9051 Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
Operate or tend heating equipment other than basic metal, plastic, or food processing equipment. Includes activities, such as annealing glass, drying lumber, curing rubber, removing moisture from materials, or boiling soap.
Illustrative Examples: Brick Baker; Stoker; Tunnel Kiln Operator

51-9061 Inspectors, Testers, Sorters, Samplers, and Weighers
(Quality Checker) Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.
Illustrative Examples: Bearing Inspector; Testing and Regulating Technician

51-9071 Jewelers and Precious Stone and Metal Workers
(Gemologist) Design, fabricate, adjust, repair, or appraise jewelry, gold, silver, other precious metals, or gems. Include diamond polishers and gem cutters and persons who perform precision casting and modeling of molds, casting metal in molds, or setting precious and semi-precious stones for jewelry and related products.
Illustrative Examples: Diamond Expert; Goldsmith

51-9081 Dental Laboratory Technicians
(Orthodontic Technician) Construct and repair full or partial dentures or dental appliances. Exclude "Dental Assistants" (31-9091).
Illustrative Examples: Ceramist; Crown and Bridge Technician

51-9082 Medical Appliance Technicians
(Orthotics Technician) Construct, fit, maintain, or repair medical supportive devices, such as braces, artificial limbs, joints, arch supports, and other surgical and medical appliances.
Illustrative Examples: Brace Maker; Prosthetics Technician

51-9083 Ophthalmic Laboratory Technicians
(Lens Grinder) Cut, grind, and polish eyeglasses, contact lenses, or other precision optical elements. Assemble and mount lenses into frames or process other optical elements. Include precision lens polishers or grinders, centerer-edgers, and lens mounters. Exclude "Opticians, Dispensing" (29-2081).
Illustrative Examples: Eyeglass Maker; Spectacle Truer

51-9111 Packaging and Filling Machine Operators and Tenders
(Bottler, Cannery Worker) Operate or tend machines to prepare industrial or consumer products for storage or shipment. Include cannery workers who pack food products.
Illustrative Examples: Bottle Caser; Wrapper Layer; Strapping Machine Operator

51-9121 Coating, Painting, and Spraying Machine Setters, Operators, and Tenders
Set up, operate, or tend machines to coat or paint any of a wide variety of products including food, glassware, cloth, ceramics, metal, plastic, paper, or wood, with lacquer, silver, copper, rubber, varnish, glaze, enamel, oil, or rust-proofing materials. Exclude "Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic" (51-4193) and "Painters, Transportation Equipment" (51-9122).
Illustrative Examples: Electrostatic Paint Operator; Silvering Applicator; Supercalender Operator

51-9122 Painters, Transportation Equipment
Operate or tend painting machines to paint surfaces of transportation equipment, such as automobiles, buses, trucks, trains, boats, and airplanes. Include painters in auto body repair facilities.
Illustrative Examples: Auto Painter; Rust Proofer

51-9123 Painting, Coating, and Decorating Workers
Paint, coat, or decorate articles, such as furniture, glass, plateware, pottery, jewelry, cakes, toys, books, or leather. Exclude "Artists and Related Workers" (27-1011 through 27-1019), "Designers" (27-1021 through 27-1029), "Photographic Process Workers" (51-9131), and "Etchers and Engravers" (51-9194).
Illustrative Examples: Stenciler; Candy Dipper; Mirror Silverer

51-9131 Photographic Process Workers
(Photo Finisher) Perform precision work involved in photographic processing, such as editing photographic negatives and prints, using photo-mechanical, chemical, or computerized methods.
Illustrative Examples: Photographic Colorist; Darkroom Technician

51-9132 Photographic Processing Machine Operators
(Film Processor) Operate photographic processing machines, such as photographic printing machines, film developing machines, and mounting presses.
Illustrative Examples: Film Printer; Reproduction Machine Loader

51-9141 Semiconductor Processors
Perform any or all of the following functions in the manufacture of electronic semiconductors: load semiconductor material into furnace; saw formed ingots into segments; load individual segment into crystal growing chamber and monitor controls; locate crystal axis in ingot using x-ray equipment and saw ingots into wafers; clean, polish, and load wafers into series of special purpose furnaces, chemical baths, and equipment used to form circuitry and change conductive properties.
Illustrative Examples: Circuit Recorder; Crystal Grower; Wafer Machine Operator

51-9191 Cementing and Gluing Machine Operators and Tenders
(Taping Machine Operator) Operate or tend cementing and gluing machines to join items for further processing or to form a completed product. Processes include joining veneer sheets into plywood; gluing paper; joining rubber and rubberized fabric parts, plastic, simulated leather, or other materials. Exclude "Shoe Machine Operators and Tenders" (51-6042).
Illustrative Examples: Bonding Molder; Paper Sealer; Taper Operator

51-9192 Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders
(Fruit Washer) Operate or tend machines to wash or clean products, such as barrels or kegs, glass items, tin plate, food, pulp, coal, plastic, or rubber, to remove impurities.
Illustrative Examples: Acid Dipper; Degreaser Operator; Pulp Bleacher

51-9193 Cooling and Freezing Equipment Operators and Tenders
(Chiller Tender) Operate or tend equipment, such as cooling and freezing units, refrigerators, batch freezers, and freezing tunnels, to cool or freeze products, food, blood plasma, and chemicals.
Illustrative Examples: Ice Maker; Refrigerating Machine Operator

51-9194 Etchers and Engravers
Engrave or etch metal, wood, rubber, or other materials for identification or decorative purposes. Include such workers as etcher-circuit processors, pantograph engravers, and silk screen etchers. Include photoengravers with "Prepress Technicians and Workers" (51-5022).
Illustrative Examples: Embosser; Letterer; Siderographer

51-9195 Molders, Shapers, and Casters, Except Metal and Plastic
Mold, shape, form, cast, or carve products such as food products, figurines, tile, pipes, and candles consisting of clay, glass, plaster, concrete, stone, or combinations of materials.
Illustrative Examples: Cigar Roller; Glass Blower; Marble Finisher

51-9196 Paper Goods Machine Setters, Operators, and Tenders
Set up, operate, or tend paper goods machines that perform a variety of functions, such as converting, sawing, corrugating, banding, wrapping, boxing, stitching, forming, or sealing paper or paperboard sheets into products.
Illustrative Examples: Bag Machine Operator; Box Fabricator; Carton Forming Machine Operator

51-9197 Tire Builders
(Retreader) Operate machines to build tires from rubber components.
Illustrative Examples: Tire Curer; Tube Builder

51-9198 Helpers--Production Workers
Help production workers by performing duties of lesser skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate production occupation (51-1011 through 51-9199).
Illustrative Examples: Welder's Assistant; Tailor's Aide; Millwright's Helper

51-9199 Production Workers, All Other
All production workers not listed separately.
Illustrative Examples: Barrel Header; Mop Maker

Transportation and Material Moving Occupations

Supervisors, Transportation and Material Moving Workers

53-1011 Aircraft Cargo Handling Supervisors
(Loadmaster) Direct ground crew in the loading, unloading, securing, and staging of aircraft cargo or baggage. Determine the quantity and orientation of cargo and compute aircraft center of gravity. May accompany aircraft as member of flight crew and monitor and handle cargo in flight, and assist and brief passengers on safety and emergency procedures. Include loadmasters.
Illustrative Examples: Ramp Boss; Ground Crew Supervisor

53-1021 First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand
Supervise and coordinate the activities of helpers, laborers, or material movers.
Illustrative Examples: Cargo Supervisor; Yard Supervisor; Warehouse Supervisor

53-1031 First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators
Directly supervise and coordinate activities of transportation and material-moving machine and vehicle operators and helpers.
Illustrative Examples: Dockmaster; Gas Station Manager; Roadmaster

Air Transportation Workers

53-2011 Airline Pilots, Copilots, and Flight Engineers
Pilot and navigate the flight of multi-engine aircraft in regularly scheduled service for the transport of passengers and cargo. Requires Federal Air Transport rating and certification in specific aircraft type used. Include aircraft instructors with similar certification.
Illustrative Examples: Airline Captain; First Officer; Flight Navigator

53-2012 Commercial Pilots
(Crop Duster, Helicopter Pilot) Pilot and navigate the flight of small fixed or rotary winged aircraft, primarily for the transport of cargo and passengers. Requires Commercial Rating. Include aircraft instructors with similar certification.
Illustrative Example: Test Pilot

53-2021 Air Traffic Controllers
Control air traffic on and within vicinity of airport and movement of air traffic between altitude sectors and control centers according to established procedures and policies. Authorize, regulate, and control commercial airline flights according to government or company regulations to expedite and ensure flight safety.
Illustrative Examples: Control Tower Operator; Flight Control Specialist; Flight Dispatcher

53-2022 Airfield Operations Specialists
Ensure the safe takeoff and landing of commercial and military aircraft. Duties include coordination between air-traffic control and maintenance personnel; dispatching; using airfield landing and navigational aids; implementing airfield safety procedures; monitoring and maintaining flight records; and applying knowledge of weather information.
Illustrative Examples: Airfield Manager; Flight Director; Flight Operations Coordinator

Motor Vehicle Operators

53-3011 Ambulance Drivers and Attendants, Except Emergency Medical Technicians
Drive ambulance or assist ambulance driver in transporting sick, injured, or convalescent persons. Assist in lifting patients.
Illustrative Example: Patient Carrier

53-3021 Bus Drivers, Transit and Intercity
Drive bus or motor coach, including regular route operations, charters, and private carriage. May assist passengers with baggage. May collect fares or tickets.
Illustrative Examples: Motor Coach Operator; Jitney Driver

53-3022 Bus Drivers, School
Transport students or special clients, such as the elderly or persons with disabilities. Ensure adherence to safety rules. May assist passengers in boarding or exiting.

53-3031 Driver/Sales Workers
Drive truck or other vehicle over established routes or within an established territory and sell goods, such as food products, including restaurant take-out items, or pick up and deliver items, such as laundry. May also take orders and collect payments. Include newspaper delivery drivers. Exclude "Truck Drivers, Light or Delivery Services" (53-3033) and "Coin, Vending, and Amusement Machine Servicers and Repairers" (49-9091).
Illustrative Examples: Bakery Delivery Person; Milk Delivery Person; Bread Distributor

53-3032 Truck Drivers, Heavy and Tractor-Trailer
Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 GVW, to transport and deliver goods, livestock, or materials in liquid, loose, or packaged form. May be required to unload truck. May require use of automated routing equipment. Requires commercial drivers' license.
Illustrative Examples: Auto Carrier Driver; Cement Truck Driver; Moving Van Driver

53-3033 Truck Drivers, Light or Delivery Services
Drive a truck or van with a capacity of under 26,000 GVW, primarily to deliver or pick up merchandise or to deliver packages within a specified area. May require use of automatic routing or location software. May load and unload truck. Exclude "Couriers and Messengers" (43-5021).
Illustrative Example: Parcel Post Truck Driver

53-3041 Taxi Drivers and Chauffeurs
(Hearse Driver) Drive automobiles, vans, or limousines to transport passengers. May occasionally carry cargo. Include hearse drivers. Exclude "Ambulance Drivers and Attendants, Except Emergency Medical Technicians" (53-3011) and "Bus Drivers" (53-3021 through 53-3022).
Illustrative Examples: Cab Driver; Limousine Driver

53-3099 Motor Vehicle Operators, All Other
All motor vehicle operators not listed separately.
Illustrative Examples: Motorcycle Delivery Driver; Assembly Line Driver; Street Cleaning Equipment Operator

Rail Transportation Workers

53-4011 Locomotive Engineers
Drive electric, diesel-electric, steam, or gas-turbine-electric locomotives to transport passengers or freight. Interpret train orders, electronic or manual signals, and railroad rules and regulations.
Illustrative Examples: Diesel Engineer; Narrow Gauge Operator; Rail Car Operator

53-4012 Locomotive Firers
Monitor locomotive instruments and watch for dragging equipment, obstacles on rights-of-way, and train signals during run. Watch for and relay traffic signals from yard workers to yard engineer in railroad yard.
Illustrative Examples: Assistant Engineer; Railroad Firer

53-4013 Rail Yard Engineers, Dinkey Operators, and Hostlers
Drive switching or other locomotive or dinkey engines within railroad yard, industrial plant, quarry, construction project, or similar location.
Illustrative Examples: Car Mover; Larry Car Operator; Coal Tram Driver

53-4021 Railroad Brake, Signal, and Switch Operators
Operate railroad track switches. Couple or uncouple rolling stock to make up or break up trains. Signal engineers by hand or flagging. May inspect couplings, air hoses, journal boxes, and hand brakes.
Illustrative Examples: Car Hopper; Coupler; Switch Tender

53-4031 Railroad Conductors and Yardmasters
Conductors coordinate activities of train crew on passenger or freight train. Coordinate activities of switch-engine crew within yard of railroad, industrial plant, or similar location. Yardmasters coordinate activities of workers engaged in railroad traffic operations, such as the makeup or breakup of trains, yard switching, and review train schedules and switching orders.
Illustrative Examples: Car Dispatcher; Roadmaster; Yard Pilot

53-4041 Subway and Streetcar Operators
Operate subway or elevated suburban train with no separate locomotive, or electric-powered streetcar to transport passengers. May handle fares.
Illustrative Examples: Monorail Operator; Tram Operator; Trolley Operator

53-4099 Rail Transportation Workers, All Other
All rail transportation workers not listed separately.
Illustrative Examples: Car Retarder Operator; Ballast Regulator Operator

Water Transportation Workers

53-5011 Sailors and Marine Oilers
(Able Seaman, Ordinary Seaman) Stand watch to look for obstructions in path of vessel, measure water depth, turn wheel on bridge, or use emergency equipment as directed by captain, mate, or pilot. Break out, rig, overhaul, and store cargo-handling gear, stationary rigging, and running gear. Perform a variety of maintenance tasks to preserve the painted surface of the ship and to maintain line and ship equipment. Must hold government-issued certification and tankerman certification when working aboard liquid-carrying vessels. Include able seamen and ordinary seamen.
Illustrative Example: Deckhand

53-5021 Captains, Mates, and Pilots of Water Vessels
Command or supervise operations of ships and water vessels, such as tugboats and ferryboats, that travel into and out of harbors, estuaries, straits, and sounds and on rivers, lakes, bays, and oceans. Required to hold license issued by U.S. Coast Guard. Exclude "Motorboat Operators" (53-5022).
Illustrative Examples: Barge Captain; Deck Officer; Tugboat Operator

53-5022 Motorboat Operators
(Launch Operator) Operate small motor-driven boats to carry passengers and freight between ships, or ship to shore. May patrol harbors and beach areas. May assist in navigational activities.
Illustrative Example: Speedboat Operator

53-5031 Ship Engineers
(Marine Engine Mechanic) Supervise and coordinate activities of crew engaged in operating and maintaining engines, boilers, deck machinery, and electrical, sanitary, and refrigeration equipment aboard ship.
Illustrative Example: Deck Engineer

Other Transportation Workers

53-6011 Bridge and Lock Tenders
Operate and tend bridges, canal locks, and lighthouses to permit marine passage on inland waterways, near shores, and at danger points in waterway passages. May supervise such operations. Include drawbridge operators, lock tenders and operators, and slip bridge operators.
Illustrative Examples: Drawbridge Operator; Lighthouse Keeper; Lock Master

53-6021 Parking Lot Attendants
(Valet Parker) Park automobiles or issue tickets for customers in a parking lot or garage. May collect fee.
Illustrative Examples: Car Hop; Car Runner

53-6031 Service Station Attendants
Service automobiles, buses, trucks, boats, and other automotive or marine vehicles with fuel, lubricants, and accessories. Collect payment for services and supplies. May lubricate vehicle, change motor oil, install antifreeze, or replace lights or other accessories, such as windshield wiper blades or fan belts. May repair or replace tires.
Illustrative Examples: Filling Station Attendant; Gas and Oil Servicer; Pump Attendant

53-6041 Traffic Technicians
Conduct field studies to determine traffic volume, speed, effectiveness of signals, adequacy of lighting, and other factors influencing traffic conditions, under direction of traffic engineer.
Illustrative Example: Traffic Analyst

53-6051 Transportation Inspectors
Inspect equipment or goods in connection with the safe transport of cargo or people. Include rail transport inspectors, such as freight inspectors, car inspectors, rail inspectors, and other nonprecision inspectors of other types of transportation vehicles.
Illustrative Examples: Airplane Inspector; Motor Vehicle Examiner; Safety Agent

53-6099 Transportation Workers, All Other
All transportation workers not listed separately.
Illustrative Example: Rickshaw Driver

Material Moving Workers

53-7011 Conveyor Operators and Tenders
Control or tend conveyors or conveyor systems that move materials or products to and from stockpiles, processing stations, departments, or vehicles. May control speed and routing of materials or products.
Illustrative Examples: Belt Tender; Grain Elevator Operator

53-7021 Crane and Tower Operators
(Cherry Picker Operator) Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions. Exclude "Excavating and Loading Machine and Dragline Operators" (53-7032).
Illustrative Examples: Boomswing Operator; Scrap Drop Operator

53-7031 Dredge Operators
Operate dredge to remove sand, gravel, or other materials from lakes, rivers, or streams; and to excavate and maintain navigable channels in waterways.
Illustrative Example: Dredger

53-7032 Excavating and Loading Machine and Dragline Operators
Operate or tend machinery equipped with scoops, shovels, or buckets, to excavate and load loose materials. Exclude "Dredge Operators" (53-7031).
Illustrative Examples: Back Hoe Operator; Payloader Operator; Shovel Operator

53-7033 Loading Machine Operators, Underground Mining
Operate underground loading machine to load coal, ore, or rock into shuttle or mine car or onto conveyors. Loading equipment may include power shovels, hoisting engines equipped with cable-drawn scraper or scoop, or machines equipped with gathering arms and conveyor.
Illustrative Example: Coke Loader

53-7041 Hoist and Winch Operators
(Hydraulic Boom Operator) Operate or tend hoists or winches to lift and pull loads using power-operated cable equipment. Exclude "Crane and Tower Operators" (53-7021).
Illustrative Examples: Derrick Operator; Well Puller

53-7051 Industrial Truck and Tractor Operators
(Fork Lift Driver) Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location. Exclude "Logging Equipment Operators" (45-4022).
Illustrative Examples: Skidder Operator; Stacker Operator

53-7061 Cleaners of Vehicles and Equipment
(Detailer) Wash or otherwise clean vehicles, machinery, and other equipment. Use such materials as water, cleaning agents, brushes, cloths, and hoses. Exclude "Janitors and Cleaners, Except Maids and Housekeeping Cleaners" (37-2011).
Illustrative Examples: Barrel Washer; Auto Detailer; Machine Cleaner

53-7062 Laborers and Freight, Stock, and Material Movers, Hand
Manually move freight, stock, or other materials or perform other unskilled general labor. Include all unskilled manual laborers not elsewhere classified. Exclude "Material Moving Workers" (53-7011 through 53-7199) who use power equipment. Exclude "Construction Laborers" (47-2061) and "Construction Trades Helpers" (47-3011 through 47-3019).
Illustrative Examples: Cargo Handler; Stevedore; Truck Loader and Unloader

53-7063 Machine Feeders and Offbearers
Feed materials into or remove materials from machines or equipment that is automatic or tended by other workers.
Illustrative Examples: Hopper Filler; Board Catcher; Doffer

53-7064 Packers and Packagers, Hand
(Bagger, Gift Wrapper) Pack or package by hand a wide variety of products and materials.
Illustrative Example: Boxer

53-7071 Gas Compressor and Gas Pumping Station Operators
(Gas Transfer Operator) Operate steam, gas, electric motor, or internal combustion engine driven compressors. Transmit, compress, or recover gases, such as butane, nitrogen, hydrogen, and natural gas.
Illustrative Example: Gas Booster Engineer

53-7072 Pump Operators, Except Wellhead Pumpers
Tend, control, or operate power-driven, stationary, or portable pumps and manifold systems to transfer gases, oil, other liquids, slurries, or powdered materials to and from various vessels and processes.
Illustrative Examples: Brewery Pumper; Main-Line Station Engineer; Oil Pumper

53-7073 Wellhead Pumpers
Operate power pumps and auxiliary equipment to produce flow of oil or gas from wells in oil field.
Illustrative Example: Oil Well Service Operator

53-7081 Refuse and Recyclable Material Collectors
(Trash Collector) Collect and dump refuse or recyclable materials from containers into truck. May drive truck.
Illustrative Examples: Garbage Collector; Scrap Metal Collector

53-7111 Shuttle Car Operators
Operate diesel or electric-powered shuttle car in underground mine to transport materials from working face to mine cars or conveyor.
Illustrative Examples: Car Dumper; Cart Driver; Shuttle Buggy Operator

53-7121 Tank Car, Truck, and Ship Loaders
Load and unload chemicals and bulk solids, such as coal, sand, and grain into or from tank cars, trucks, or ships using material moving equipment. May perform a variety of other tasks relating to shipment of products. May gauge or sample shipping tanks and test them for leaks.
Illustrative Examples: Coal Dumping Equipment Operator; Loader Operator; Spout Tender

53-7199 Material Moving Workers, All Other
All material moving workers not listed separately.
Illustrative Examples: Elevator Operator; Hand Trucker; Longshore Equipment Operator