

11-0000 – MANAGEMENT OCCUPATIONS

11-1011 Chief Executives

Determine and formulate policies and provide overall direction of companies or private and public sector organizations within 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: Governor

11-1021 General and Operations Managers

Plan, direct, or coordinate the operations of public or 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. Excludes First-Line Supervisors.

Illustrative examples: General Superintendent, Radio Station Manager, Television Station Manager

11-1031 Legislators

Develop, introduce or enact laws and statutes at the local, tribal, State, or Federal level. Includes only workers in elected positions.

Illustrative examples: City Council Member, Senator, Tribal Council Member

11-2011 Advertising and Promotions Managers

Plan, direct, or coordinate 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: Advertising Director, Advertising Executive, Promotions Director

11-2021 Marketing Managers

Plan, direct, or coordinate marketing policies and programs, such as determining 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: Internet Marketing Manager, Marketing Administrator, Marketing Director

11-2022 Sales Managers

Plan, direct, or coordinate 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: District Sales Manager, Export Manager, Regional Sales Manager, Sales Director

11-2031 Public Relations and Fundraising Managers

Plan, direct, or coordinate activities designed to create or maintain a favorable public image or raise issue awareness for their organization or client; or if engaged in fundraising, plan, direct, or coordinate activities to solicit and maintain funds for special projects or nonprofit organizations.

Illustrative examples: Fundraising Director, Public Affairs Director, Publicity Director

11-3011 Administrative Services Managers

Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, facilities planning and maintenance, custodial operations, and other office support services. Medical records administrators are included in "Medical and Health Services Managers" (11-9111). Excludes "Purchasing Managers" (11-3061).

Illustrative examples: Facilities Manager, Records and Information Manager, Records Management Director

11-3021 Computer and Information Systems Managers

Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. Excludes "Computer Occupations" (15-1111 through 15-1199). *Illustrative examples: Chief Technology Officer, Information Technology Systems Director, Management Information Systems Director*

11-3031 Financial Managers

Plan, direct, or coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.

Illustrative examples: Comptroller, Financial Director

11-3051 Industrial Production Managers

Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.

Illustrative examples: Manufacturing Director, Plant Manager, Production Control Manager

11-3061 Purchasing Managers

Plan, direct, or coordinate the activities of buyers, purchasing officers, and related workers involved in purchasing materials, products, and services. Includes wholesale or retail trade merchandising managers and procurement managers.

Illustrative examples: Contracting Manager, Procurement Manager, Purchasing Director

11-3071 Transportation, Storage, and Distribution Managers

Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Includes logistics managers.

Illustrative examples: Distribution Center Manager, Traffic Safety Administrator, Warehouse Manager

11-3111 Compensation and Benefits Managers

Plan, direct, or coordinate compensation and benefits activities of an organization. Job analysis and position description managers are included in "Human Resource Managers" (11-3121).

Illustrative examples: Compensation Director, Employee Benefits Director, Wage and Salary Administrator

11-3121 Human Resources Managers

Plan, direct, or coordinate human resources activities and staff of an organization. Excludes managers who primarily focus on compensation and benefits (11-3111) and training and development (11-3131).

Illustrative examples: Job Analysis Manager, Labor Relations Director, Personnel Manager, Position Description Manager

11-3131 Training and Development Managers

Plan, direct, or coordinate the training and development activities and staff of an organization.
Illustrative examples: E-Learning Manager, Employee Development Director, Labor Training Manager

11-9013 Farmers, Ranchers, and Other Agricultural Managers

Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities. Excludes "First-Line Supervisors of Farming, Fishing, and Forestry Workers" (45-1011).

Illustrative examples: Animal Husbandry Manager, Dairy Farm Manager, Fish Hatchery Manager, Orchard Manager

11-9021 Construction Managers

Plan, direct, or coordinate, 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, budgeting, and implementation. Includes managers in specialized construction fields, such as carpentry or plumbing.

Illustrative examples: Construction Coordinator, Construction Superintendent, General Contractor

11-9031 Education Administrators, Preschool and Childcare Center/Program

Plan, direct, or coordinate the academic and nonacademic activities of preschool and childcare centers or programs. Excludes "Preschool Teachers" (25-2011).

Illustrative examples: Childcare Center Administrator, Head Start Director, Preschool Director

11-9032 Education Administrators, Elementary and Secondary School

Plan, direct, or coordinate the academic, administrative, or auxiliary activities of public or private elementary or secondary level schools.

Illustrative examples: Elementary School Principal, High School Principal, Middle School Principal

11-9033 Education Administrators, Postsecondary

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 examples: Provost, University Administrator

11-9039 Education Administrators, All Other

All education administrators not listed separately.

11-9041 Architectural and Engineering Managers

Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields. Excludes "Natural Sciences Managers" (11-9121).

Illustrative examples: Engineering Design Manager, Global Engineering Manager, Mechanical Engineering Director

11-9051 Food Service Managers

Plan, direct, or coordinate activities of an organization or department that serves food and beverages. Excludes "Chefs and Head Cooks" (35-1011).

Illustrative examples: Banquet Director, Food Service Director, Tavern Operator

11-9061 Funeral Service Managers

Plan, direct, or coordinate the services or resources of funeral homes. Includes activities such as determining prices for services or merchandise and managing the facilities of funeral homes. Excludes "Morticians, Undertakers, and Funeral Directors" (39-4031).

Illustrative examples: Funeral Home Director, Funeral Home Manager

11-9071 Gaming Managers

Plan, direct, or coordinate gaming operations in a casino. May formulate house rules.

Illustrative examples: Casino Manager, Slot Operations Manager, Table Games Manager

11-9081 Lodging Managers

Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations. Excludes "Food Service Managers" (11-9051) in lodging establishments.

Illustrative examples: Bed and Breakfast Innkeeper, Hotel Manager, Innkeeper

11-9111 Medical and Health Services Managers

Plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.

Illustrative examples: Clinic Director, Hospital Administrator, Medical Records Administrator, Mental Health Program Manager

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. Excludes "Architectural and Engineering Managers" (11-9041) and "Computer and Information Systems Managers" (11-3021).

Illustrative examples: Agricultural Research Director, Geophysical Manager, Ocean Program Administrator

11-9131 Postmasters and Mail Superintendents

Plan, direct, or 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.

Illustrative examples: Postal Supervisor, Postmaster

11-9141 Property, Real Estate, and Community Association Managers

Plan, direct, or coordinate the selling, buying, leasing, or governance activities of commercial, industrial, or residential real estate properties. Includes managers of homeowner and condominium associations, rented or leased housing units, buildings, or land (including rights-of-way).

Illustrative examples: Apartment Manager, Building Rental Manager, Leasing Property Manager

11-9151 Social and Community Service Managers

Plan, direct, 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, Family Service Center Director, Youth Program Director

11-9161 Emergency Management Directors

Plan and direct 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 or hazardous materials spills) disasters or hostage situations.

Illustrative examples: Disaster Response Director, Emergency Preparedness Coordinator, Public Safety Director

11-9199 Managers, All Other

All managers not listed separately.

Illustrative examples: Clerk of Court, Social Science Manager, Utilities Manager

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13-0000 – BUSINESS & FINANCIAL OPERATIONS OCCUPATIONS

13-1011 Agents and Business Managers of Artists, Performers, and Athletes

Represent and promote artists, performers, and athletes in dealings with current or prospective employers. May handle contract negotiation and other business matters for clients.

Illustrative examples: Band Manager, Literary Agent, Theatrical Agent

13-1021 Buyers and Purchasing Agents, Farm Products

Purchase farm products either for further processing or resale. Includes tree farm contractors, grain brokers and market operators, grain buyers, and tobacco buyers.

Illustrative examples: Cotton Broker, Fruit Buyer, Livestock 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. Includes assistant wholesale and retail buyers of nonfarm products.

Illustrative examples: Gold Buyer, Merchandise Buyer

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. Excludes "Buyers and Purchasing Agents, Farm Products" (13-1021) and "Wholesale and Retail Buyers, Except Farm Products" (13-1022).

Illustrative examples: Equipment, Supplies, and Tools Purchasing Agent; Radio Time Buyer

13-1031 Claims Adjusters, Examiners, and Investigators

Review settled claims to determine that payments and settlements are made in accordance with company practices and procedures. Confer with legal counsel on claims requiring litigation. May also settle insurance claims. Excludes "Fire Inspectors and Investigators" (33-2021).

Illustrative examples: Fire Claims Adjuster, Health Insurance Adjuster, Property and Casualty Insurance Claims Examiner

13-1032 Insurance Appraisers, Auto Damage

Appraise automobile or other vehicle damage to determine repair costs for insurance claim settlement. Prepare insurance forms to indicate repair cost or cost estimates and recommendations. May seek agreement with automotive repair shop on repair costs.

Illustrative examples: Automobile Damage Appraiser, Vehicle Damage Appraiser

13-1041 Compliance Officers

Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and perform other compliance and enforcement inspection and analysis activities not classified elsewhere. Excludes "Financial Examiners" (13-2061), "Tax Examiners and Collectors, and Revenue Agents" (13-2081), "Occupational Health and Safety Specialists" (29-9011), "Occupational Health and Safety Technicians" (29-9012), Transportation Security Screeners (33-9093), "Agricultural Inspectors" (45-2011), "Construction and Building Inspectors" (47-4011), and "Transportation Inspectors" (53-6051).

Illustrative examples: Driver's License Examiner, Environmental Compliance Inspector, Equal Employment Opportunity Officer

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 Job Cost Estimator, Crating and Moving Estimator, Production Cost Estimator

13-1071 Human Resources Specialists

Perform activities in the human resource area. Includes employment specialists who screen, recruit, interview, and place workers. Excludes "Compensation, Benefits, and Job Analysis Specialists" (13-1141) and "Training and Development Specialists" (13-1151).

Illustrative examples: Human Resources Generalist, Personnel Recruiter, Staffing Coordinator

13-1074 Farm Labor Contractors

Recruit and hire seasonal or temporary agricultural laborers. May transport, house, and provide meals for workers.

Illustrative example: Harvesting Contractor

13-1075 Labor Relations Specialists

Resolve disputes between workers and managers, negotiate collective bargaining agreements, or coordinate grievance procedures to handle employee complaints. Excludes equal employment opportunity (EEO) officers who are included in "Compliance Officers" (13-1041).

Illustrative examples: Employee Relations Specialist, Labor Relations Consultant, Union Representative

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. Excludes "Transportation, Storage, and Distribution Managers" (11-3071).

Illustrative examples: Logistics Analyst, Logistics Planner, Logistics Specialist

13-1111 Management Analysts

Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Includes program analysts and management consultants. Excludes "Computer Systems Analysts" (15-1121) and "Operations Research Analysts" (15-2031).

Illustrative examples: Business Management Analyst, Business Process Consultant, Industrial Analyst

13-1121 Meeting, Convention, and Event Planners

Coordinate activities of staff, convention personnel, or clients to make arrangements for group meetings, events, or conventions.

Illustrative examples: Conference Planner, Corporate Meeting Planner, Wedding Planner

13-1131 Fundraisers

Organize activities to raise funds or otherwise solicit and gather monetary donations or other gifts for an organization. May design and produce promotional materials. May also raise awareness of the organization's work, goals, and financial needs.

Illustrative examples: Campaign Fundraiser, Donor Relations Officer, Fundraising Officer

13-1141 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: Employee Benefits Specialist, Job Analyst, Retirement Plan Specialist

13-1151 Training and Development Specialists

Design and conduct training and development programs to improve individual and organizational performance. May analyze training needs.

Illustrative examples: Computer Training Specialist, Corporate Trainer, Workforce Development Specialist

13-1161 Market Research Analysts and Marketing Specialists

Research market conditions in local, regional, or national areas, or gather information to determine potential sales of a product or service, or create a marketing campaign. May gather information on competitors, prices, sales, and methods of marketing and distribution.

Illustrative examples: Market Research Specialist, Marketing Consultant, Marketing Forecaster

13-1199 Business Operations Specialists, All Other

All business operations specialists not listed separately.

Illustrative examples: Mystery Shopper, Ship Purser

13-2011 Accountants and Auditors

Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data. Excludes "Tax Examiners and Collectors, and Revenue Agents" (13-2081).

Illustrative examples: Certified Public Accountant, Field Auditor, Internal Auditor

13-2021 Appraisers and Assessors of Real Estate

Appraise real property and estimate its fair value. May assess taxes in accordance with prescribed schedules.

Illustrative examples: Land Appraiser, Property Appraiser, Tax Assessor

13-2031 Budget Analysts

Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports.

Illustrative examples: Budget Examiner, Budget Officer, Cost Analyst

13-2041 Credit Analysts

Analyze 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 credit information for use in decision making.

Illustrative examples: Credit Assessment Analyst, Credit Risk Analyst

13-2051 Financial Analysts

Conduct quantitative analyses of information affecting investment programs of public or private institutions.

Illustrative examples: Corporate Financial Analyst, Corporate Securities Research Analyst, Institutional Commodity Analyst

13-2052 Personal Financial Advisors

Advise clients on financial plans using 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.

Illustrative examples: Estate Planner, Individual Pension Advisor, Personal Investment Advisor

13-2053 Insurance Underwriters

Review individual applications for insurance to evaluate degree of risk involved and determine acceptance of applications.

Illustrative examples: Automobile and Property Underwriter, 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, or authenticate records.

Illustrative examples: Bank Examiner, Financial Compliance Examiner, Home Mortgage Disclosure Act Specialist

13-2071 Credit Counselors

Advise and educate individuals or organizations on acquiring and managing debt. May provide guidance in determining the best type of loan and explaining loan requirements or restrictions. May help develop debt management plans, advise on credit issues, or provide budget, mortgage, and bankruptcy counseling.

Illustrative examples: Debt Management Counselor, Financial Assistance Advisor, Loan Counselor

13-2072 Loan Officers

Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and payment methods. Includes mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters.
Illustrative examples: Commercial Lender, Loan Reviewer, Real Estate Loan Officer

13-2081 Tax Examiners and Collectors, and Revenue Agents

Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.
Illustrative examples: Internal Revenue Service Agent, Revenue Collector, Tax Investigator

13-2082 Tax Preparers

Prepare tax returns for individuals or small businesses. Excludes "Accountants and Auditors" (13-2011).
Illustrative examples: Income Tax Advisor, Income Tax Preparer, Licensed Tax Consultant

13-2099 Financial Specialists, All Other

All financial specialists not listed separately.
Illustrative examples: Bail Bondsman, Executor of Estate, Foreign Exchange Trader

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15-000 – COMPUTER AND MATHEMATICAL OCCUPATIONS

15-1111 Computer and Information Research Scientists

Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software. *Illustrative examples: Control System Computer Scientist, Computational Theory Scientist, Programming Methodology and Languages Researcher*

15-1121 Computer Systems Analysts

Analyze science, engineering, business, and other data processing problems to implement and improve computer 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.

Illustrative examples: Applications Analyst, Data Processing Systems Analyst, Information Systems Analyst, Systems Architect

15-1052 Computer Systems Analysts, Non R&D

Analyze science, engineering, business, and other data processing problems to implement and improve computer 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.

15-1053 Computer Systems Analysts, R&D

These persons spend the majority of their time performing research and development activities related to their work as Computer Systems Analysts.

15-1122 Information Security Analysts

Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses. Excludes “Computer Network Architects” (15-1143).

Illustrative examples: Computer Security Specialist, Internet Security Specialist, Network Security Analyst

15-1131 Computer Programmers

Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.

Illustrative examples: Applications Programmer, Computer Language Coder, Systems Programmer

15-1022 Computer Programmers, Non R&D

Create, modify, and test the code, forms, and script that allow computer applications to run. Work from specifications drawn up by software developers or other individuals. May assist software developers by analyzing user needs and designing software solutions. May develop and write computer programs to store, locate, and retrieve specific documents, data, and information.

15-1023 Computer Programmers, R&D

These persons spend the majority of their time performing research and development activities relating to computer programming.

15-1132 Software Developers, 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. May supervise computer programmers.

Illustrative examples: Computer Applications Engineer, Database Developer, Software Applications Architect, Software Applications Engineer

15-1034 Software Developers, 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. May supervise computer programmers.

15-1035 Software Developers, Applications, R&D

These persons spend the majority of their time performing research and development activities relating to their work as Software Developers, Applications.

15-1133 Software Developers, 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. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.

Illustrative examples: Computer Systems Software Architect, Embedded Systems Software Developer, Software Systems Engineer

15-1036 Software Developers, Systems Software, Non R&D

Design, develop, and test operating systems-level software, compilers, and network distribution software. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.

15-1037 Software Developers, Systems Software, R&D

These persons spend the majority of their time performing research and development activities relating to their work as Software Developers, Systems Software.

15-1134 Web Developers

Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. Convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content. Excludes “Multimedia Artists and Animators” (27-1014).
Illustrative examples: Internet Developer, Intranet Developer, Web Designer

15-1141 Database Administrators

Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases. Excludes “Information Security Analysts” (15-1122).
Illustrative examples: Database Management System Specialist, Database Security Administrator

15-1142 Network and Computer Systems Administrators

Install, configure, and support an organization’s local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test Web site performance to ensure Web sites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures. Excludes “Information Security Analysts”(15-1122), “Computer User Support Specialists” (15-1151), and “Computer Network Support Specialists” (15-1152).
Illustrative examples: Network Coordinator, Network Security Administrator, Wide Area Network Administrator

15-1143 Computer Network Architects

Design and implement computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning. May also design network and computer security measures. May research and recommend network and data communications hardware and software. Excludes “Information Security Analysts” (15-1122), “Network and Computer Systems Administrators” (15-1142), and “Computer Network Support Specialists” (15-1152).
Illustrative examples: Computer Network Engineer, Network Designer, Network Developer

15-1054 Computer Network Architects, Non R&D

Design and implement computer and information networks, such as local area network (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. Perform network modeling, analysis, and planning. May also design network and computer security measures. Excludes “Information Security Analysts” (15-1122), “Network and Computer Systems Administrators” (15-1142), and “Computer Network Support Specialists” (15-1152).

15-1055 Computer Network Architects, R&D

These persons spend the majority of their time performing research and development activities involving computer and information networks.

15-1151 Computer User Support Specialists

Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Excludes "Network and Computer Systems Administrators" (15-1142).

Illustrative examples: Desktop Support Specialist, End-User Support Specialist, Help Desk Technician

15-1152 Computer Network Support Specialists

Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption. Excludes "Network and Computer Systems Administrators" (15-1142) and "Computer Network Architects" (15-1143).

Illustrative examples: Network Diagnostic Support Technician, Network Support Technician, Network Technician

15-1199 Computer Occupations, All Other

All computer occupations not listed separately. Excludes "Computer and Information Systems Managers" (11-3021), "Computer Hardware Engineers" (17-2061), "Electrical and Electronics Engineers" (17-2070), "Computer Science Teachers, Postsecondary" (25-1021), "Multimedia Artists and Animators" (27-1014), "Graphic Designers" (27-1024), "Computer Operators" (43-9011), and "Computer, Automated Teller, and Office Machine Repairers" (49-2011).

Illustrative example: Computer Laboratory Technician

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 insurance rates required and cash reserves necessary to ensure payment of future benefits. *Illustrative examples: Actuarial Mathematician, Health Actuary, Insurance Actuary*

15-2021 Mathematicians

Conduct research in fundamental mathematics or in application of mathematical techniques to science, management, and other fields. Solve problems in various fields using mathematical methods.

Illustrative examples: Algebraist, Cryptographer, Cryptographic Vulnerability Analyst

15-2031 Operations Research Analysts

Formulate and apply mathematical modeling and other optimizing methods to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May collect and analyze data and develop decision support software, service, or products. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.

Illustrative examples: Operations Analyst, Procedure Analyst, Process Analyst

15-2041 Statisticians

Develop or apply mathematical or 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, or economic statistics. Includes mathematical and survey statisticians. Excludes "Survey Researchers" (19-3022).

Illustrative examples: Biostatistician, Statistical Analyst, Time Study Statistician

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.

Illustrative example: Mathematical Engineering Technician

15-2099 Mathematical Science Occupations, All Other

All mathematical scientists not listed separately.

Illustrative example: Harmonic Analyst

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17-0000 – ARCHITECTURE & ENGINEERING OCCUPATIONS

17-1011 Architects, Except Landscape and Naval

Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property. Excludes “Landscape Architects” (17-1012) and “Marine Engineers and Naval Architects” (17-2121).

Illustrative examples: Building Architect, Building Architectural Designer, Structural Architect

17-1012 Landscape Architects

Plan and design land areas for projects such as parks and other recreational facilities, airports, highways, hospitals, schools, land subdivisions, and commercial, industrial, and residential sites. *Illustrative examples: Golf Course Architect, Golf Course Designer, 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: Digital Cartographer, Mapper, Topographer*

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 Surveyor, Mineral Surveyor

17-2011 Aerospace Engineers

Perform engineering duties 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: Aeronautical Engineer, Aircraft Design Engineer, Flight Test 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: Agricultural Production Engineer, Agricultural Research Engineer, Farm Equipment 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 health management and care delivery systems.

Illustrative examples: Biomaterials Engineer, Bio-Mechanical Engineer, Dialysis Engineer

17-2041 Chemical Engineers

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: Fuels Engineer, Plastics Engineer, Polymerization Engineer*

17-2051 Civil Engineers

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, and water and sewage systems. Includes architectural, structural, traffic, ocean, and geo-technical engineers. Excludes "Hydrologists" (19-2043).

Illustrative examples: Bridge Engineer, Construction Engineer, Highway 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, and water and sewage systems. Includes 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, or 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. Excludes "Software Developers, Applications" (15-1132) and "Software Developers, Systems Software" (15-1133).

Illustrative examples: Computer Hardware Designer, Computer Hardware Developer

17-2062 Computer Hardware Engineers, Non-R&D

Design, develop, or 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.

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.

17-2071 Electrical Engineers

Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Excludes "Computer Hardware Engineers" (17-2061).

Illustrative examples: Electrical Systems Engineer, Illuminating Engineer, Power Distribution Engineer

17-2073 Electrical Engineers, Non-R&D

Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use. Excludes "Computer Hardware Engineers" (17-2061).

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.

17-2072 Electronics Engineers, Except Computer

Research, design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use employing 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. Excludes "Computer Hardware Engineers" (17-2061).

Illustrative examples: Circuit Design Engineer, Electronic Design Automation Engineer, Telecommunication Engineer

17-2075 Electronics Engineers, Except Computer, Non-R&D

Design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use employing knowledge of electronic theory and materials properties. Design electronic circuits and components. Excludes "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

Research, design, plan, or perform engineering duties in the prevention, control, and remediation of environmental hazards using various engineering disciplines. Work may include waste treatment, site remediation, or pollution control technology.

Illustrative examples: Environmental Remediation Engineer, Pollution Control Engineer, Soil Engineer, Water Treatment Engineer

17-2111 Health and Safety Engineers, Except Mining Safety Engineers and Inspectors

Promote worksite or product safety by applying knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws. Includes industrial product safety engineers.

Illustrative examples: Fire Protection Engineer, Industrial Safety Engineer, Product Safety Engineer

17-2112 Industrial Engineers

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. Excludes "Health and Safety Engineers, Except Mining Safety Engineers and Inspectors" (17-2111).

Illustrative examples: Efficiency Engineer, Manufacturing Engineer, Packaging Engineer, Production 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, Marine Structural Designer, Naval Engineer

17-2131 Materials Engineers

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. Includes those engineers 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. Includes metallurgists and metallurgical engineers, ceramic engineers, and welding engineers.

Illustrative examples: Automotive Sheet Metal Engineer, Forensic Materials Engineer, Metallographer

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 equipment such as centralized heat, gas, water, and steam systems.

Illustrative examples: Combustion Engineer, Engine Designer, Heating and Cooling Systems Engineer, Tool and Die 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 equipment such as centralized heat, gas, water, and steam systems.

17-2144 Mechanical Engineers, R&D

These persons spend the majority of their time performing research and development activities relating to their work as Mechanical Engineers.

17-2151 Mining and Geological Engineers, Including Mining Safety Engineers

Conduct sub-surface surveys to identify the characteristics of potential land or mining development sites. May specify the ground support systems, processes and equipment for safe, economical, and environmentally sound extraction or underground construction activities. May inspect areas for unsafe geological conditions, equipment, and working conditions. May design, implement, and coordinate mine safety programs. Excludes "Petroleum Engineers" (17-2171).

Illustrative examples: Geophysical Engineer, Mineral Engineer, Seismic Engineer

17-2161 Nuclear Engineers

Conduct research on nuclear engineering projects or apply principles and theory of nuclear science to problems concerned with release, control, and use of nuclear energy and nuclear waste disposal.

Illustrative examples: Atomic Process Engineer, Nuclear Radiation Engineer, Radiation Engineer, Reactor Engineer

17-2171 Petroleum Engineers

Devise methods to improve oil and gas extraction and production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice.
Illustrative examples: Natural Gas Engineer, Oil Drilling Engineer, Oil Exploration Engineer

17-2199 Engineers, All Other

All engineers not listed separately.
Illustrative examples: Optical Engineer, Ordnance Engineer, Photonics Engineer, Salvage Engineer

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. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.
Illustrative examples: Building Drafter, Civil Computer-Aided Design and Drafting Technician, Structural Drafter

17-3012 Electrical and Electronics Drafters

Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.
Illustrative examples: Electrical Computer Aided Design and Drafting Technician, Electrical Systems Drafter, Printed Circuit Board Drafter

17-3013 Mechanical Drafters

Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.
Illustrative examples: Aeronautical Drafter, Automotive Design Drafter, Tool and Die Designer

17-3019 Drafters, All Other

All drafters not listed separately.
Illustrative examples: Blueprint Tracer, Geological Drafter, Marine 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, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.
Illustrative examples: Altitude Chamber Technician, Flight Data Technician, Wind Tunnel 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 examples: Geotechnical Engineering Technician, Highway Engineering Technician, Structural Engineering 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. Excludes "Broadcast Technicians" (27-4012).

Illustrative examples: Electrical Design Technician, Lighting Engineering Technician, Semiconductor Development Technician

17-3024 Electro-Mechanical Technicians

Operate, test, maintain, or calibrate 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.

Illustrative examples: Remotely Piloted Vehicle Engineering Technician, Robotics Testing Technician

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 problems, including waste treatment and site remediation, under the direction of engineering staff or scientist. May assist in the development of environmental remediation devices.

Illustrative examples: Air Analysis Engineering Technician, Environmental Remediation Engineering Technician, Pollution Control Engineering 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 perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.

Illustrative examples: Motion Study Technician, Production Control Technologist, Time Study Technician

17-3027 Mechanical Engineering Technicians

Apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.

Illustrative examples: Gyroscope Engineering Technician, Heat Transfer Technician, Optomechanical Technician

17-3029 Engineering Technicians, Except Drafters, All Other

All engineering technicians, except drafters, not listed separately.

Illustrative examples: Agricultural Engineering Technician, Biomedical Engineering Technician, Metallurgical Engineering Technician, Optical Engineering Technician

17-3031 Surveying and Mapping Technicians

Perform surveying and mapping duties, usually under the direction of an engineer, 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 maps. Excludes "Surveyors" (17-1022), "Cartographers and Photogrammetrists" (17-1021), and "Geoscientists, Except Hydrologists and Geographers" (19-2042).

Illustrative examples: Cartographic Technician, Field Map Technician, GIS Mapping Technician

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LIFE, PHYSICAL & SOCIAL SCIENCE OCCUPATIONS

19-1011 Animal Scientists

Conduct research in the genetics, nutrition, reproduction, growth, and development of domestic farm animals.

Illustrative examples: Animal Nutritionist, 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.

Illustrative examples: Dairy Bacteriologist, Enologist, Food Safety Scientist

19-1013 Soil and Plant Scientists

Conduct research in breeding, physiology, production, yield, and management of crops and agricultural plants or trees, shrubs, and nursery stock, 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: Arboreal Scientist, Horticulturist, Plant Physiologist

19-1021 Biochemists and Biophysicists

Study the chemical composition or 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.

Illustrative examples: Biological Chemist, Clinical Biochemist, Physical Biochemist

19-1022 Microbiologists

Investigate the growth, structure, development, and other characteristics of microscopic organisms, such as bacteria, algae, or fungi. Includes medical microbiologists who study the relationship between organisms and disease or the effects of antibiotics on microorganisms.

Illustrative examples: Bacteriologist, Public Health Microbiologist, Virologist

19-1023 Zoologists and Wildlife Biologists

Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife. May specialize in wildlife research and management. May collect and analyze biological data to determine the environmental effects of present and potential use of land and water habitats.

Illustrative examples: Herpetologist, Ichthyologist, Marine Biologist, Ornithologist

19-1029 Biological Scientists, All Other

All biological scientists not listed separately.

Illustrative examples: Embryologist, Osteologist, Paleobotanist

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. 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. Excludes "Zoologists and Wildlife Biologists" (19-1023) and "Foresters" (19-1032).

Illustrative examples: Grassland Conservationist, Range Ecologist, Soil Conservationist

19-1032 Foresters

Manage public and private 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 optimal harvesting schedules.

Illustrative examples: Environmental Protection Forester, Forest Ecologist, Timber Management Specialist

19-1041 Epidemiologists

Investigate and describe the determinants and distribution of disease, disability, or health outcomes. May develop the means for prevention and control.

Illustrative examples: Epidemiology Investigator, Malariologist, Pharmacoepidemiologist

19-1042 Medical Scientists, Except Epidemiologists

Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation, research and development, or other related activities. Includes physicians, dentists, public health specialists, pharmacologists, and medical pathologists who primarily conduct research. Practitioners who primarily provide medical or dental care or dispense drugs are included in "Health Diagnosing and Treating Practitioners" (29-1000).

Illustrative examples: Cancer Researcher, Immunochemist, Toxicologist

19-1099 Life Scientists, All Other

All life scientists not listed separately.

Illustrative example: Life Science Taxonomist

19-2011 Astronomers

Observe, research, and interpret astronomical phenomena to increase basic knowledge or apply such information to practical problems.

Illustrative example: Astrophysicist

19-2012 Physicists

Conduct research into physical phenomena, develop theories on the basis of observation and experiments, and devise methods to apply physical laws and theories. Excludes "Biochemists and Biophysicists" (19-1021). *Illustrative examples: Fluid Dynamicist, Molecular Physicist, Optical Scientist, Rheologist*

19-2021 Atmospheric and Space Scientists

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. Includes weather analysts and forecasters whose functions require the detailed knowledge of meteorology. *Illustrative examples: Atmospheric Chemist, Climatologist, Hurricane Tracker, Meteorologist*

19-2031 Chemists

Conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge. Excludes "Geoscientists, Except Hydrologists and Geographers" (19-2042) and "Biochemists and Biophysicists" (19-1021).

Illustrative examples: Food Chemist, Industrial Chemist, Inorganic Chemist, Research and Development Chemist

19-2032 Materials Scientists

Research and study the structures and chemical properties of various natural and synthetic or composite 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. Includes glass scientists, ceramic scientists, metallurgical scientists, and polymer scientists.

Illustrative examples: Metal Alloy Scientist, Plastics Scientist

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. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources. Excludes "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: Hazardous Substances Scientist, Health Environmentalist, Water Pollution Scientist

19-2042 Geoscientists, Except Hydrologists and Geographers

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. Includes mineralogists, crystallographers, paleontologists, stratigraphers, geodesists, and seismologists.

Illustrative examples: Geochemist, Oceanographer, Petrologist, Volcanologist

19-2043 Hydrologists

Research the distribution, circulation, and physical properties of underground and surface waters; and 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 examples: Hydrogeologist, Isotope Hydrologist, Surface Hydrologist

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. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources. Excludes "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).

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.

19-3011 Economists

Conduct research, prepare reports, or formulate plans to address economic problems related to the production and distribution of goods and services or monetary and fiscal policy. May collect and process economic and statistical data using sampling techniques and econometric methods. Excludes "Market Research Analysts and Marketing Specialists" (13-1161). *Illustrative examples: Econometrician, Economic Research Analyst, Environmental Economist, Industrial Economist*

19-3022 Survey Researchers

Plan, develop, or conduct surveys. May analyze and interpret the meaning of survey data, determine survey objectives, or suggest or test question wording. Includes social scientists who primarily design questionnaires or supervise survey teams. Excludes "Market Research Analysts and Marketing Specialists" (13-1161) and "Statisticians" (15-2041). *Illustrative examples: Pollster, Survey Methodologist, Survey Questionnaire Designer*

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: Child Psychologist, Geropsychologist, School Psychologist, Vocational Psychologist*

19-3032 Industrial-Organizational Psychologists

Apply principles of psychology to human resources, administration, management, sales, and marketing problems. Activities may include policy planning; employee testing and selection, training and development; and organizational development and analysis. May work with management to organize the work setting to improve worker productivity.

Illustrative examples: Engineering Psychologist, Human Resources Psychologist, Management 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. May design and implement behavior modification programs.

19-3037 Clinical, Counseling, and School Psychologists, R&D

These persons spend the majority of their time conducting research on treatment of mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems.

19-3039 Psychologists, All Other

All psychologists not listed separately. *Illustrative examples: Forensic Psychologist,*

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, Family Sociologist, Rural Sociologist

19-3051 Urban and Regional Planners

Develop comprehensive plans and programs for use of land and physical facilities of jurisdictions, such as towns, cities, counties, and metropolitan areas.

Illustrative examples: City Planner, Community Development Planner

19-3091 Anthropologists and Archeologists

Study the origin, development, and behavior of human beings. May study the way of life, language, or physical characteristics of 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 examples: Ethnoarcheologist, Political Anthropologist, Research Archeologist

19-3092 Geographers

Study the nature and use of areas of the 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.

Illustrative examples: Economic Geographer, Geomorphologist, GIS Geographer, Political Geographer

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, electronic media, and unpublished manuscripts, such as personal diaries and letters.

Illustrative examples: Genealogist, Historiographer, Protohistorian

19-3094 Political Scientists

Study the origin, development, and operation of political systems. 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. Excludes "Survey Researchers" (19-3022).

Illustrative examples: Government Affairs Specialist, Political Consultant, Political Research Scientist

19-3099 Social Scientists and Related Workers, All Other

All social scientists and related workers not listed separately.

Illustrative examples: Demographer, Ethnologist, Linguist

19-4011 Agricultural and Food Science Technicians

Work with agricultural and food scientists in food, fiber, and animal research, production, and processing; and assist with animal breeding and nutrition. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects. Includes technicians who assist food scientists or technologists in the research and development of production technology, quality control, packaging, processing, and use of foods.

Illustrative examples: Dairy Technologist, Feed Research Technician, Seed Analyst

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: Bacteriology Technician, Marine Fisheries Technician, Wildlife Technician

19-4031 Chemical Technicians

Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for 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: Assayer, Chemical Laboratory Technician, Inorganic Chemical Technician*

19-4041 Geological and Petroleum Technicians

Assist scientists or engineers in the use of electronic, sonic, or nuclear measuring instruments in both laboratory and production activities to obtain data indicating potential resources such as metallic ore, minerals, gas, coal, 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 metallic ore, minerals, gas, coal, or petroleum deposits.

Illustrative examples: Crude Tester, Geophysical Prospector, Seismic Observer

19-4051 Nuclear Technicians

Assist nuclear physicists, nuclear engineers, or other scientists in laboratory or production activities. May operate, maintain, or provide quality control for nuclear testing and research equipment. May monitor radiation.

Illustrative examples: Nuclear Monitoring Technician, Radiochemical Technician

19-4061 Social Science Research Assistants

Assist social scientists in laboratory, survey, and other social science research. May help prepare findings for publication and assist in laboratory analysis, quality control, or data management. Excludes "Graduate Teaching Assistants" (25-1191).

Illustrative examples: City Planning Aide, Economic Research Assistant, Historian Research Assistant

19-4091 Environmental Science and Protection Technicians, Including Health

Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health, under the direction of an environmental scientist, engineer, or other specialist. May collect samples of gases, soil, water, and other materials for testing.

Illustrative examples: Groundwater Monitoring Technician, Infectious Waste Technician, Pollution Control Technician, Waste Minimization 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: Ballistics Expert, Crime Scene Technician, Trace Evidence Technician

19-4093 Forest and Conservation Technicians

Provide technical assistance regarding the conservation of soil, water, forests, or related natural resources. May compile data pertaining to size, content, condition, and other characteristics of forest tracts, under the direction of foresters; or 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. Excludes "Conservation Scientists" (19-1031) and "Foresters" (19-1032).

Illustrative examples: Forestry Aide, Soil Conservation Technician, Timber Management Technician

19-4099 Life, Physical, and Social Science Technicians, All Other

All life, physical, and social science technicians not listed separately.

Illustrative examples: Meteorological Aide, Polygraph Examiner

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COMMUNITY & SOCIAL SERVICE OCCUPATIONS

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. Excludes "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, Alcohol and Drug Counselor, Chemical Dependency Counselor

21-1012 Educational, Guidance, School, and Vocational Counselors

Counsel individuals and provide group educational and vocational guidance services.

Illustrative examples: Career Counselor, Career Technical Counselor

21-1013 Marriage and Family Therapists

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 services to individuals, couples, and families for the purpose of treating such diagnosed nervous and mental disorders. Excludes "Social Workers" (21-1021 through 21-1029) and "Psychologists" of all types (19-3031 through 19-3039). *Illustrative examples: Child and Family Counselor, Couples Therapist, Marriage Counselor*

21-1014 Mental Health Counselors

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

Illustrative examples: Licensed Clinical Mental Health Counselor (LCMHC), Licensed Mental Health Counselor (LMHC)

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: Psychosocial Rehabilitation Counselor, Veterans Rehabilitation Counselor, Vocational Rehabilitation Counselor

21-1019 Counselors, All Other

All counselors not listed separately.

Illustrative examples: Anger Control Counselor, Grief Counselor, Sexual Assault Counselor

21-1021 Child, Family, and School Social Workers

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 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. *Illustrative examples: Certified Children, Youth, and Family Social Worker; Child Abuse Worker; Foster Care worker*

21-1022 Healthcare Social Workers

Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Services include advising family care givers, providing patient education and counseling, and making referrals for other services. May also provide care and case management or interventions designed to promote health, prevent disease, and address barriers to access to healthcare. *Illustrative examples: Hospice Social Worker, Oncology Social Worker, Public Health Social Worker*

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 Social Worker, Drug Abuse Social Worker, Psychiatric Social Worker

21-1029 Social Workers, All Other

All social workers not listed separately.

Illustrative examples: Criminal Justice Social Worker, Forensic Social Worker, Sexual Assault Social Worker

21-1091 Health Educators

Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. 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 serve as a resource to assist individuals, other healthcare workers, or the community, and may administer fiscal resources for health education programs. Excludes "Community Health Workers" (21-1094).

Illustrative examples: Community Health Education Coordinator, Diabetes Educator, Public Health Educator

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: Juvenile Probation Officer, Parole Agent, Parole Officer

21-1093 Social and Human Service Assistants

Assist in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. May assist clients in identifying and obtaining available benefits and social and community services. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or dependent care. Excludes "Rehabilitation Counselors" (21-1015), "Psychiatric Technicians" (29-2053), "Personal Care Aides" (39-9021), and "Eligibility Interviewers, Government Programs" (43-4061).

Illustrative examples: Case Work Aide, Family Service Assistant, Human Services Worker

21-1094 Community Health Workers

Assist individuals and communities to adopt healthy behaviors. Conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health. May provide information on available resources, provide social support and informal counseling, advocate for individuals and community health needs, and provide services such as first aid and blood pressure screening. May collect data to help identify community health needs. Excludes "Health Educators" (21-1091).

Illustrative examples: Lay Health Advocate, Peer Health Promoter

21-1099 Community and Social Service Specialists, All Other

All community and social service specialists not listed separately.

Illustrative examples: Community Organization Worker, Veterans Service Officer

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: Imam, Priest, Rabbi

21-2021 Directors, Religious Activities and Education

Plan, direct, or coordinate programs designed to promote the religious education or activities of a denominational group. May provide counseling and guidance relative to marital, health, financial, and religious problems.

Illustrative examples: Religious Education Director, Youth Ministry Director

21-2099 Religious Workers, All Other

All religious workers not listed separately.

Illustrative examples: Missionary, Mohel, Verger

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LEGAL OCCUPATIONS

23-1011 Lawyers

Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, or 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, Corporate Counsel*

23-1012 Judicial Law Clerks

Assist judges in court or by conducting research or preparing legal documents. Excludes "Lawyers" (23-1011) and "Paralegals and Legal Assistants" (23-2011).

23-1021 Administrative Law Judges, Adjudicators, and Hearing Officers

Conduct hearings to recommend or make decisions on claims concerning government programs or other government-related matters. Determine liability, sanctions, or penalties, or recommend the acceptance or rejection of claims or settlements. Excludes "Arbitrators, Mediators, and Conciliators" (23-1022). *Illustrative example: Appeals Examiner, Justice of the Peace, 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. *Illustrative examples: Alternative Dispute Resolution Coordinator, Mediation Commissioner, Ombudsman*

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 or sentencing guidelines. May determine liability of defendant in civil cases. May perform wedding ceremonies. *Illustrative example: Circuit Court Judge, Justice, Tribal Judge*

23-2011 Paralegals and Legal Assistants

Assist lawyers by investigating facts, preparing legal documents, or researching legal precedent. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action. Excludes "Legal Secretaries" (43-6012). *Illustrative example: Legal Aide*

23-2091 Court Reporters

Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Includes stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers. *Illustrative examples: Court Stenographer, Court Transcriber, Deposition Reporter*

23-2093 Title Examiners, Abstractors, and Searchers

Search real estate records, examine titles, or summarize pertinent legal or insurance documents or 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 example: Escrow Officer, Lien Searcher, Title Officer*

23-2099 Legal Support Workers, All Other
All legal support workers not listed separately.
Illustrative example: Legal Technician

25-0000 – EDUCATION, TRAINING & LIBRARY OCCUPATIONS

25-1011 Business Teachers, Postsecondary

Teach courses in business administration and management, such as accounting, finance, human resources, labor and industrial relations, marketing, and operations research. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Accounting Professor, Finance Professor, Marketing Professor

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. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative example: Computer Information Systems Professor, Information Technology Professor, Java Programming Professor

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. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Actuarial Sciences Professor, Calculus Professor, Statistics Professor

25-1031 Architecture Teachers, Postsecondary

Teach courses in architecture and architectural design, such as architectural environmental design, interior architecture/design, and landscape architecture. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Architectural Design Professor, Landscape Architecture Professor

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. Includes teachers of subjects such as chemical, civil, electrical, industrial, mechanical, mineral, and petroleum engineering. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Excludes "Computer Science Teachers, Postsecondary" (25-1021).

Illustrative examples: Aeronautical Engineering Professor, Civil Engineering Professor, Electrical Engineering Professor, Marine Engineering Professor

25-1041 Agricultural Sciences Teachers, Postsecondary

Teach courses in the agricultural sciences. Includes teachers of agronomy, dairy sciences, fisheries management, horticultural sciences, poultry sciences, range management, and agricultural soil conservation. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Excludes "Forestry and Conservation Science Teachers, Postsecondary" (25-1043).

Illustrative examples: Agronomy Professor, Aquaculture and Fisheries Professor, Farm Management Professor

25-1042 Biological Science Teachers, Postsecondary

Teach courses in biological sciences. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Bacteriology Professor, Biochemistry Professor, Botany Professor

25-1043 Forestry and Conservation Science Teachers, Postsecondary

Teach courses in forestry and conservation science. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Excludes "Agricultural Science Teachers, Postsecondary" (25-1041) and "Environmental Science Teachers, Postsecondary" (25-1053). *Illustrative examples: Forest Ecology Professor, Timber Management Professor, Wildlife Conservation Professor*

25-1051 Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary

Teach courses in the physical sciences, except chemistry and physics. Includes both teachers primarily engaged in teaching, and those who do a combination of teaching and research.

Illustrative examples: Climatology Professor, Geology Professor, Oceanography Professor

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. Includes both teachers primarily engaged in teaching, and those who do a combination of teaching and research. Excludes "Biological Science Teachers, Postsecondary" (25-1042) who teach biochemistry. *Illustrative examples: Inorganic Chemistry Professor, Organic Chemistry Professor, Physical Chemistry Professor*

25-1053 Environmental Science Teachers, Postsecondary

Teach courses in environmental science. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Environmental Science, Management, and Policy Professor; Environmental Studies Professor

25-1054 Physics Teachers, Postsecondary

Teach courses pertaining to the laws of matter and energy. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Astrophysics Professor, Ballistics Professor, Hydrodynamics Professor, Thermodynamics Professor

25-1061 Anthropology and Archeology Teachers, Postsecondary

Teach courses in anthropology or archeology. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Cultural Anthropology Professor, Ethnoarchaeology Professor, Paleology Professor

25-1062 Area, Ethnic, and Cultural Studies Teachers, Postsecondary

Teach courses pertaining to the culture and development of an area, an ethnic group, or any other group, such as Latin American studies, women's studies, or urban affairs. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Ethnology Professor, Latin American Studies Professor, Women's Studies Professor

25-1063 Economics Teachers, Postsecondary

Teach courses in economics. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Agricultural Economics Professor, Econometrics Professor, Labor Economics Professor

25-1064 Geography Teachers, Postsecondary

Teach courses in geography. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Cartography Professor, Geomatics Professor, GIS Professor

25-1065 Political Science Teachers, Postsecondary

Teach courses in political science, international affairs, and international relations. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research. *Illustrative examples: Government Professor, International Relations Professor, Public Policy Professor*

25-1066 Psychology Teachers, Postsecondary

Teach courses in psychology, such as child, clinical, and developmental psychology, and psychological counseling. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Child Development Professor, Educational Psychology Professor, Industrial/Organizational Psychology Professor

25-1067 Sociology Teachers, Postsecondary

Teach courses in sociology. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative example: Comparative Sociology Professor

25-1069 Social Sciences Teachers, Postsecondary, All Other

All postsecondary social sciences teachers not listed separately.

Illustrative examples: Survey Research Professor, Urban Planning Professor

25-1071 Health Specialties Teachers, Postsecondary

Teach courses in health specialties, in fields such as dentistry, laboratory technology, medicine, pharmacy, public health, therapy, and veterinary medicine. Excludes "Nursing Instructors and Teachers, Postsecondary" (25-1072) and "Biological Science Teachers, Postsecondary" (25-1042) who teach medical science.

Illustrative examples: Nutrition Professor, Pharmacology Professor, Public Health Professor

25-1072 Nursing Instructors and Teachers, Postsecondary

Demonstrate and teach patient care in classroom and clinical units to nursing students. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Advanced Nursing Professor, Clinical Nursing Professor, Registered Nursing Professor

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. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Primary Education Professor, Special Education Professor

25-1082 Library Science Teachers, Postsecondary

Teach courses in library science. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Library and Information Science Professor, Medical Records Library Professor

25-1111 Criminal Justice and Law Enforcement Teachers, Postsecondary

Teach courses in criminal justice, corrections, and law enforcement administration. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Criminology Professor, Penology Professor

25-1112 Law Teachers, Postsecondary

Teach courses in law. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Constitutional Law Professor, Environmental Law Professor, Torts Law Professor

25-1113 Social Work Teachers, Postsecondary

Teach courses in social work. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Family Welfare Social Work Professor, Geriatric Social Work Professor, Health Social Work Professor

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. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Ballet Professor, Photography Professor, Piano Professor

25-1122 Communications Teachers, Postsecondary

Teach courses in communications, such as organizational communications, public relations, radio/television broadcasting, and journalism. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Journalism Professor, Public Speaking Professor

25-1123 English Language and Literature Teachers, Postsecondary

Teach courses in English language and literature, including linguistics and comparative literature. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Contemporary English Literature Professor, Creative Writing English Professor, Etymology Professor

25-1124 Foreign Language and Literature Teachers, Postsecondary

Teach languages and literature courses in languages other than English. Includes teachers of American Sign Language (ASL). Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Chinese Language Professor, Russian Language Professor, Spanish Literature Professor

25-1125 History Teachers, Postsecondary

Teach courses in human history and historiography. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: African History Professor, American History Professor, Jewish History Professor, Russian History Professor

25-1126 Philosophy and Religion Teachers, Postsecondary

Teach courses in philosophy, religion, and theology. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Divinity Professor, Eastern Philosophy Professor, Theology Professor

25-1191 Graduate Teaching Assistants

Assist faculty or other instructional staff in postsecondary institutions 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 teaching assistants must be enrolled in a graduate school program. Graduate assistants who primarily perform non-teaching duties, such as research, should be reported in the occupational category related to the work performed. Excludes "Teacher Assistants" (25-9041).

Illustrative examples: Graduate Student Instructor, Teaching Fellow

25-1192 Home Economics Teachers, Postsecondary

Teach courses in childcare, family relations, finance, nutrition, and related subjects pertaining to home management. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Family and Consumer Sciences Professor, Weaving Professor

25-1193 Recreation and Fitness Studies Teachers, Postsecondary

Teach courses pertaining to recreation, leisure, and fitness studies, including exercise physiology and facilities management. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research.

Illustrative examples: Kinesiology Professor, Leisure Studies Professor, Physical Education (PE) Professor

25-1194 Vocational Education Teachers, Postsecondary

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. Includes correspondence school, industrial, and commercial 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: Barbering Instructor, Cosmetology Professor, Mechanical Maintenance Instructor

25-1199 Postsecondary Teachers, All Other

All postsecondary teachers not listed separately.

Illustrative examples: Military Science Teacher, Project Management Professor

25-2011 Preschool Teachers, Except Special Education

Instruct preschool-aged children 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. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Childcare Workers" (39-9011) and "Special Education Teachers" (25-2050).

Illustrative examples: Head Start Teacher, Nursery School Teacher, Pre-Kindergarten Teacher

25-2012 Kindergarten Teachers, Except Special Education

Teach elemental natural and social science, personal hygiene, music, art, and literature to kindergarten students. Promote physical, mental, and social development. May be required to hold State certification. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Special Education Teachers" (25-2050).

Illustrative example: Bilingual Kindergarten Teacher

25-2021 Elementary School Teachers, Except Special Education

Teach students basic academic, social, and other formative skills in public or private schools at the elementary level. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Special Education Teachers" (25-2050).

Illustrative examples: Elementary School Band Director, 4th Grade Math Teacher

25-2022 Middle School Teachers, Except Special and Career/Technical Education

Teach students in one or more subjects in public or private schools at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable laws and regulations. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Career/Technical Education Teachers, Middle School" (25-2023) and "Special Education Teachers" (25-2050).

Illustrative examples: Junior High School Teacher, Middle School Science Teacher, 7th Grade Social Studies Teacher

25-2023 Career/Technical Education Teachers, Middle School

Teach occupational, career and technical, or vocational subjects in public or private schools at the middle, intermediate, or junior high level, which falls between elementary and senior high school as defined by applicable laws and regulations. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Special Education Teachers" (25-2050). *Illustrative example: Middle School Vocational Education Teacher*

25-2031 Secondary School Teachers, Except Special and Career/Technical Education

Teach students in one or more subjects, such as English, mathematics, or social studies at the secondary level in public or private schools. May be designated according to subject matter specialty. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Career/Technical Education Teachers, Secondary School" (25-2032) and "Special Education Teachers" (25-2050). *Illustrative examples: High School English Teacher, High School French Teacher, High School History Teacher*

25-2032 Career/Technical Education Teachers, Secondary School

Teach occupational, career and technical, or vocational subjects at the secondary school level in public or private schools. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099). Excludes "Special Education Teachers, Secondary School" (25-2054).

Illustrative examples: High School Auto Repair Teacher, High School Vocational Education Teacher

25-2051 Special Education Teachers, Preschool

Teach preschool school subjects to educationally and physically handicapped students. Includes 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. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099).

Illustrative examples: Early Childhood Special Education Teacher, Pre-Kindergarten Special Education Teacher

25-2052 Special Education Teachers, Kindergarten and Elementary School

Teach elementary school subjects to educationally and physically handicapped students. Includes 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. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099).

Illustrative examples: Severe Emotional Disorders Elementary School Teacher, Special Education Kindergarten Teacher

25-2053 Special Education Teachers, Middle School

Teach middle school subjects to educationally and physically handicapped students. Includes 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. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099).

Illustrative examples: Middle School Special Education Teacher, Middle School Teacher for Students with Moderate Intellectual Disabilities

25-2054 Special Education Teachers, Secondary School

Teach secondary school subjects to educationally and physically handicapped students. Includes 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. Substitute teachers are included in "Teachers and Instructors, All Other" (25-3099).

Illustrative examples: High School Learning Support Teacher, High School Special Education Teacher

25-2059 Special Education Teachers, All Other

All special education teachers not listed separately.

Illustrative examples: Autism Tutor, Special Education Teacher for Adults with Disabilities

25-3011 Adult Basic and Secondary Education and Literacy 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 examples: Adult Education Teacher, Adult Literacy Instructor, Generalized Educational Development (GED) 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. Excludes "Fitness Trainers and Aerobics Instructors" (39-9031). Flight instructors are included with "Aircraft Pilots and Flight Engineers" (53-2010).

Illustrative examples: Citizenship Teacher, Horseback Riding Instructor, Sailing Instructor

25-3098 Substitute Teachers

Teach students in a public or private school when the regular teacher is unavailable.

25-3099 Teachers and Instructors, All Other

All teachers and instructors not listed separately.

Illustrative example: Tutor, Substitute Teacher

25-4011 Archivists

Appraise, edit, and direct safekeeping of permanent records and historically valuable documents. Participate in research activities based on archival materials.

Illustrative examples: Film Archivist, Historical Records Administrator, Reference Archivist

25-4012 Curators

Administer collections, such as artwork, collectibles, historic items, or scientific specimens of museums or other institutions. May conduct instructional, research, or public service activities of institution.

Illustrative examples: Herbarium Curator, Photography and Prints Curator

25-4013 Museum Technicians and Conservators

Restore, maintain, or prepare objects in museum collections for storage, research, or exhibit. May work with specimens such as fossils, skeletal parts, or botanicals; or artifacts, textiles, or art. May identify and record objects or install and arrange them in exhibits. Includes book or document conservators.

Illustrative examples: Ethnographic Materials Conservator, Museum Exhibit Technician, Textile Conservator

25-4021 Librarians

Administer libraries and perform related library services. Work in a variety of settings, including public libraries, educational institutions, 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: Law Librarian, Music Librarian, School Librarian

25-4031 Library Technicians

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 or other media; remove or repair damaged books or other media; register patrons; and check materials in and out of the circulation process. Replace materials in shelving area (stacks) or files. Includes bookmobile drivers who assist with providing services in mobile libraries.

Illustrative examples: Library Acquisitions Technician, Library Circulation Technician

25-9011 Audio-Visual and Multimedia Collections Specialists

Prepare, plan, and operate multimedia teaching aids for use in education. May record, catalogue, and file materials.

Illustrative examples: Audio-Visual Collections Coordinator, Library Media Specialist, Multimedia Services Coordinator

25-9021 Farm and Home Management Advisors

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; and instruct and train in product development, sales, and the use of machinery and equipment to promote general welfare. Includes county agricultural agents, feed and farm management advisors, home economists, and extension service advisors.

Illustrative examples: Agricultural Extension Educator, Family Resource Management Specialist, Feed Management Advisor

25-9031 Instructional Coordinators

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. Includes educational consultants and specialists, and instructional material directors.

Illustrative examples: Curriculum and Assessment Director, Curriculum Specialist, Special Education Curriculum Specialist

25-9041 Teacher Assistants

Perform duties that are instructional in nature or deliver direct services to students or parents. Serve in a position for which a teacher has ultimate responsibility for the design and implementation of educational programs and services. Excludes "Graduate Teaching Assistants" (25-1191).

Illustrative examples: Instructional Aide, Special Education Classroom Aide

25-9099 Education, Training, and Library Workers, All Other

All education, training, and library workers not listed separately.

Illustrative examples: General Educational Development (GED) Examiner, Individualized Education Plan (IEP) Aide, Scholastic Aptitude Test (SAT) Grader

27-0000 – ARTS, DESIGN, ENTERTAINMENT, SPORTS & MEDIA OCCUPATIONS

27-1011 Art Directors

Formulate design concepts and presentation approaches for visual communications media, such as print, broadcasting, and advertising. Direct workers engaged in art work or layout design.

Illustrative example: Magazine Designer

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: Hand Potter, Metal Arts Production Artist, Quilter

27-1013 Fine Artists, Including Painters, Sculptors, and Illustrators

Create original artwork using any of a wide variety of media and techniques.

Illustrative examples: Ice Sculptor, Political Cartoonist, Scientific Illustrator, Sketch Artist

27-1014 Multimedia 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: Special Effects Artist, 3D Animator

27-1019 Artists and Related Workers, All Other

All artists and related workers not listed separately.

Illustrative examples: Calligrapher, Tattoo Artist

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: Automobile Designer, Package Designer

27-1022 Fashion Designers

Design clothing and accessories. Create original designs or adapt fashion trends.

Illustrative examples: Costume Designer, Custom Furrier, Dress Designer

27-1023 Floral Designers

Design, cut, and arrange live, dried, or artificial flowers and foliage.

Illustrative examples: Corsage Maker, Florist, Flower Arranger

27-1024 Graphic Designers

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, Graphic 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. Excludes "Merchandise Displayers and Window Trimmers" (27-1026).

Illustrative examples: Home Lighting Advisor, Interior Decorator, Kitchen Designer

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: Display Artist, Mannequin Decorator, Window Decorator

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 example: Memorial Marker Designer*

27-2011 Actors

Play parts in stage, television, radio, video, motion picture productions, or other settings 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: Actress, Dramatic Reader, Voice-Over Artist

27-2012 Producers and Directors

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 actors or guests, set design, sound, special effects, and choreography.

Illustrative examples: Casting Director, Independent Film Maker, Stage Manager

27-2021 Athletes and Sports Competitors

Compete in athletic events.

Illustrative examples: Football Player, Jockey, Race 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. Excludes "Athletic Trainers" (29-9091).

Illustrative examples: Baseball Scout, Boxing Trainer, Football Coach

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. Includes all sporting officials, referees, and competition judges.

Illustrative examples: Athletic Events Scorer, Paddock Judge, Race Starter

27-2031 Dancers

Perform dances. May perform on stage, for on-air broadcasting, or for video recording
Illustrative examples: Ballerina, Dance Artist, Tap Dancer

27-2032 Choreographers

Create new dance routines. Rehearse performance of routines. May direct and stage presentations.

Illustrative examples: Dance Director, Dance Master

27-2041 Music Directors and Composers

Conduct, direct, plan, and lead instrumental or vocal performances by musical groups, such as orchestras, bands, choirs, and glee clubs. Includes arrangers, composers, choral directors, and orchestrators.

Illustrative examples: Choirmaster, Jingle Writer, Orchestra Conductor, Songwriter

27-2042 Musicians and Singers

Play one or more musical instruments or sing. May perform on stage, for on-air broadcasting, or for sound or video recording.

Illustrative examples: Instrumentalist, Oboist, Rapper

27-2099 Entertainers and Performers, Sports and Related Workers, All Other

All entertainers and performers, sports and related workers not listed separately.

Illustrative examples: Clown, Comedian, Magician

27-3011 Radio and Television Announcers

Speak or read from scripted materials, such as news reports or commercial messages, on radio or television. May announce artist or title of performance, identify station, or interview guests. Excludes "Broadcast News Analysts" (27-3021).

Illustrative examples: Game Show Host, Radio Disk Jockey, Talk Show Host

27-3012 Public Address System and Other Announcers

Make announcements over public address system 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: Emcee, Ringmaster, Train Caller

27-3021 Broadcast News Analysts

Analyze, interpret, and broadcast news received from various sources.

Illustrative examples: News Anchor, Newscaster, News Commentator

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. Excludes "Broadcast News Analysts" (27-3021).

Illustrative examples: Columnist, Film Critic, Foreign Correspondent

27-3031 Public Relations Specialists

Engage in promoting or creating an intended public image for individuals, groups, or organizations. May write or select material for release to various communications media.

Illustrative examples: Lobbyist, Press Secretary, Publicity Writer

27-3041 Editors

Plan, coordinate, or edit content of material for publication. May review proposals and drafts for possible publication. Includes technical editors.

Illustrative examples: Advertising Editor, Copy Editor, Technical Editor

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, Medical Writer, Specifications Writer

27-3043 Writers and Authors

Originate and prepare written material, such as scripts, stories, advertisements, and other material. Excludes "Public Relations Specialists" (27-3031) and "Technical Writers" (27-3042).

Illustrative examples: Advertising Copy Writer, Playwright, Television Writer

27-3091 Interpreters and Translators

Interpret oral or sign language, or translate written text from one language into another.

Illustrative examples: American Sign Language Interpreter, Court Interpreter, Diplomatic Interpreter

27-3099 Media and Communication Workers, All Other

All media and communication workers not listed separately.

Illustrative example: Stage Technician

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. Excludes "Sound Engineering Technicians" (27-4014).

Illustrative examples: Multimedia Production Assistant, Video Control Operator, Video Production Assistant

27-4012 Broadcast Technicians

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 transmitter to broadcast radio or television programs.

Illustrative examples: Audio Engineer, Broadcast Engineer

27-4013 Radio Operators

Receive and transmit communications using radiotelephone equipment in accordance with government regulations. May repair equipment. Excludes "Radio, Cellular, and Tower Equipment Installers and Repairs" (49-2021).

Illustrative examples: Radio Officer, Radiophone Operator

27-4014 Sound Engineering Technicians

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: Audio Recording Engineer, Sound Editor, Sound Effects Technician*

27-4021 Photographers

Photograph people, landscapes, merchandise, or other subjects, using digital or film cameras and equipment. May develop negatives or use computer software to produce finished images and prints. Includes scientific photographers, aerial photographers, and photojournalists.

Illustrative examples: Marine Photographer, Medical Photographer, Wedding Photographer

27-4031 Camera Operators, Television, Video, and Motion Picture

Operate television, video, or motion picture camera to record images or scenes for various purposes, such as TV broadcasts, advertising, video production, or motion pictures.

Illustrative examples: Cinematographer, News Videographer

27-4032 Film and Video Editors

Edit moving images on film, video, or other media. May edit or synchronize soundtracks with images. Excludes "Sound Engineering Technicians"(27-4014).

Illustrative examples: Cue Selector, Film Editor, Television News Video Editor

27-4099 Media and Communication Equipment Workers, All Other

All media and communication equipment workers not listed separately.

Illustrative examples: Dimmer Board Operator, Satellite Communications Operator, Spotlight Operator

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29-000 – HEALTHCARE PRACTITIONER & TECHNICAL OCCUPATIONS

29-1011 Chiropractors

Assess, treat, and care for patients by manipulation of spine and musculoskeletal system. May provide spinal adjustment or address sacral or pelvic misalignment.
Illustrative example: Chiropractic Physician

29-1021 Dentists, General

Examine, diagnose, and treat diseases, injuries, and malformations of teeth and gums. May treat diseases of nerve, pulp, and other dental tissues affecting oral hygiene and retention of teeth. May fit dental appliances or provide preventive care. Excludes "Prosthodontists" (29-1024), "Orthodontists" (29-1023), "Oral and Maxillofacial Surgeons" (29-1022) and "Dentists, All Other Specialists" (29-1029).
Illustrative example: Family Dentist

29-1022 Oral and Maxillofacial Surgeons

Perform surgery and related procedures on the hard and soft tissues of the oral and maxillofacial regions to treat diseases, injuries, or defects. May diagnose problems of the oral and maxillofacial regions. May perform surgery to improve function or appearance.
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.
Illustrative example: Dentofacial Orthopedics Dentist, Invisible Braces Orthodontist, Pediatric Orthodontist

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.
Illustrative examples: Maxillofacial Prosthetics Dentist, Reconstructive Dentist

29-1029 Dentists, All Other Specialists

All dentists not listed separately.
Illustrative examples: Endodontist, 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: Clinical Dietitian, Pediatric Dietitian, Public Health Nutritionist

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. Ophthalmologists are included in "Physicians and Surgeons, All Other" (29-1069).
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, Hospital Pharmacist

29-1061 Anesthesiologists

Physicians who administer anesthetics prior to, during, or after surgery or other medical procedures.

Illustrative example: Obstetrical Anesthesiologist

29-1062 Family and General Practitioners

Physicians who diagnose, treat, and help prevent diseases and injuries that commonly occur in the general population. May refer patients to specialists when needed for further diagnosis or treatment.

Illustrative example: Family Practice Physician

29-1063 Internists, General

Physicians who 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. Subspecialists, such as cardiologists and gastroenterologists, are included in "Physicians and Surgeons, All Other" (29-1069).

Illustrative example: Internal Medicine Physician

29-1064 Obstetricians and Gynecologists

Physicians who provide medical care related to pregnancy or childbirth and those who diagnose, treat, and help prevent diseases of women, particularly those affecting the reproductive system. May also provide general medical care to women.

Illustrative examples: OB/GYN, OB Specialist

29-1065 Pediatricians, General

Physicians who diagnose, treat, and help prevent children's diseases and injuries.

Illustrative examples: Paediatrician, Pediatricist, Primary Care Pediatrician

29-1066 Psychiatrists

Physicians who diagnose, treat, and help prevent disorders of the mind.

Illustrative examples: Addiction Psychiatrist, Geriatric Psychiatrist, Neuropsychiatrist

29-1067 Surgeons

Physicians who treat diseases, injuries, and deformities by invasive, minimally-invasive, or non-invasive surgical methods, such as using instruments, appliances, or by manual manipulation. Excludes "Oral and Maxillofacial Surgeons" (29-1022).

Illustrative examples: Cardiovascular Surgeon, Orthopedic Surgeon, Plastic Surgeon, Thoracic Surgeon

29-1069 Physicians and Surgeons, All Other

All physicians and surgeons not listed separately.

Illustrative examples: Cardiologist, Dermatologist, Gastroenterologist, 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. Excludes "Emergency Medical Technicians and Paramedics" (29-2041), "Medical Assistants" (31-9092), "Registered Nurses" (29-1141), "Nurse Anesthetists" (29-1151), "Nurse Midwives" (29-1161), and "Nurse Practitioners" (29-1171).

Illustrative examples: Anesthesiologist Assistant, Family Practice Physician Assistant

29-1081 Podiatrists

Diagnose and treat diseases and deformities of the human foot.

Illustrative examples: Chiropodist, Foot Doctor, Foot Orthopedist

29-1122 Occupational Therapists

Assess, plan, organize, and participate in rehabilitative programs that help build or restore vocational, homemaking, and daily living skills, as well as general independence, to persons with disabilities or developmental delays.

Illustrative examples: Registered Occupational Therapist

29-1123 Physical Therapists

Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.

Illustrative examples: Geriatric Physical Therapist, 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. Excludes "Recreation Workers" (39-9032).

Illustrative examples: Certified Recreational Therapist, Drama Therapist, 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, Oxygen Therapist, Registered Respiratory Therapist

29-1127 Speech-Language Pathologists

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: Public School Speech Therapist, Speech Clinician, Speech Therapist

29-1128 Exercise Physiologists

Assess, plan, or implement fitness programs that include exercise or physical activities such as those designed to improve cardiorespiratory function, body composition, muscular strength, muscular endurance, or flexibility. Excludes “Physical Therapists” (29-1123), “Athletic Trainers” (29-9091), and “Fitness Trainers and Aerobic Instructors” (39-9031).

Illustrative examples: Applied Exercise Physiologist, Clinical Exercise Physiologist, Kinesiotherapist

29-1129 Therapists, All Other

All therapists not listed separately. *Illustrative examples: Hydrotherapist, Music Therapist*

29-1155 Speech-Language Pathologists, Non R&D

Assess and treat persons with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use.

29-1156 Speech-Language Pathologists, R&D

These persons spend the majority of their time researching speech and language problems.

29-1131 Veterinarians

Diagnose, treat, or research diseases and injuries of animals. Includes veterinarians who conduct research and development, inspect livestock, or care for pets and companion animals.

Illustrative examples: Animal Surgeon, Doctor of Veterinary Medicine (DVM), Veterinary Medicine Scientist, Wildlife Veterinarian

29-1141 Registered Nurses

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. Includes Clinical Nurse Specialists. Excludes “Nurse Anesthetists” (29-1151), “Nurse Midwives” (29-1161), and “Nurse Practitioners” (29-1171).

Illustrative examples: Coronary Care Unit Nurse, Hospice Registered Nurse, Psychiatric Nurse

29-1151 Nurse Anesthetists

Administer anesthesia, monitor patient’s vital signs, and oversee patient recovery from anesthesia. May assist anesthesiologists, surgeons, other physicians, or dentists. Must be registered nurses who have specialized graduate education.

Illustrative example: Certified Registered Nurse Anesthetist (CRNA)

29-1161 Nurse Midwives

Diagnose and coordinate all aspects of the birthing process, either independently or as part of a healthcare team. May provide well-woman gynecological care. Must have specialized, graduate nursing education.

Illustrative example: Certified Nurse Midwife (CNM)

29-1171 Nurse Practitioners

Diagnose and treat acute, episodic, or chronic illness, independently or as part of a healthcare team. May focus on health promotion and disease prevention. May order, perform, or interpret diagnostic tests such as lab work and x rays. May prescribe medication. Must be registered nurses who have specialized graduate education.

Illustrative examples: Cardiology Nurse Practitioner, Family Practice Nurse Practitioner, Gerontological Nurse Practitioner

29-1181 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 examples: Clinical Audiologist, Pediatric Audiologist

29-1199 Health Diagnosing and Treating Practitioners, All Other

All health diagnosing and treating practitioners not listed separately.

Illustrative examples: Acupuncturist, Hypnotherapist, Naturopathic Physician

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 Laboratory Technologist, Cytogenetic Technologist, 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: Histology Technician, Pathology Technician, 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 examples: Oral Hygienist, Registered Dental Hygienist

29-2031 Cardiovascular Technologists and Technicians

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. Includes vascular technologists.

Illustrative examples: Cardiac Catheterization Technologist, Echocardiographer, EKG Technician

29-2032 Diagnostic Medical Sonographers

Produce ultrasonic recordings of internal organs for use by physicians.

Illustrative examples: Registered Diagnostic Medical Sonographer, Ultrasound Technologist

29-2033 Nuclear Medicine Technologists

Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies using 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 examples: Certified Nuclear Medicine Technologist, Nuclear Cardiology Technologist, Radioisotope Technologist*

29-2034 Radiologic Technologists

Take x rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Includes technologists who specialize in other scanning modalities. Excludes "Diagnostic Medical Sonographers"(29-2032) and "Magnetic Resonance Imaging Technologists" (29-2035).

Illustrative examples: Computed Tomography (CT) Scanner Operator, X-Ray Technician

29-2035 Magnetic Resonance Imaging Technologists

Operate Magnetic Resonance Imaging (MRI) scanners. Monitor patient safety and comfort, and view images of area being scanned to ensure quality of pictures. May administer gadolinium contrast dosage intravenously. May interview patient, explain MRI procedures, and position patient on examining table. May enter into the computer data such as patient history, anatomical area to be scanned, orientation specified, and position of entry.

Illustrative examples: Computed Tomography/Magnetic Resonance Imaging Technologist (CT/MRI) Technologist, MRI Technologist

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 examples: EMT, Flight Paramedic

29-2051 Dietetic Technicians

Assist in the provision of food service and nutritional programs, under the supervision of a dietitian. May plan and produce meals based on established guidelines, teach principles of food and nutrition, or counsel individuals.

Illustrative examples: Dietary Technician, Registered Diet Technician

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 according to prescription orders.

Illustrative examples: Certified Pharmacy Technician, Pharmacist Technician

29-2053 Psychiatric Technicians

Care for individuals with mental or emotional conditions or disabilities, following the instructions of physicians or other health practitioners. 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 or injectable medications.

Illustrative examples: Behavioral Health Technician, Mental Health Technician

29-2054 Respiratory Therapy Technicians

Provide respiratory care under the direction of respiratory therapists and physicians.
Illustrative examples: Certified Respiratory Therapy Technician, Oxygen Therapy Technician

29-2055 Surgical Technologists

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: Certified Surgical Technologist, Operating Room (OR) Tech, Surgical Scrub Technologist

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. May assist a veterinarian during surgery.

Illustrative examples: Veterinary Laboratory Technician, Veterinary Surgery Technologist, Veterinary X-Ray Operator

29-2057 Ophthalmic Medical Technicians

Assist ophthalmologists by performing ophthalmic clinical functions. May administer eye exams, administer eye medications, and instruct the patient in care and use of corrective lenses.

Illustrative examples: Ocular Care Technologist, Ophthalmic Technologist

29-2061 Licensed Practical and Licensed Vocational Nurses

Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

Illustrative examples: LVN, LPN, Pediatric Licensed Practical Nurse

29-2071 Medical Records and Health Information Technicians

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 in a manner consistent with the healthcare industry's numerical coding system. Excludes "File Clerks" (43-4071).

Illustrative examples: Cancer Registrar, Health Information Coder, Health Information Systems Technician, Medical Records Specialist

29-2081 Opticians, Dispensing

Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. 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. Includes contact lens opticians.

Illustrative examples: Contact Lens Fitter, Eyeglass Fitter

29-2091 Orthotists and Prosthetists

Design, measure, fit, and adapt orthopedic braces, appliances or prostheses, such as limbs or facial parts for patients with disabling conditions.

Illustrative examples: Artificial Limb Fitter, Certified Orthotic Fitter, Pedorthist

29-2092 Hearing Aid Specialists

Select and fit hearing aids for customers. Administer and interpret tests of hearing. Assess hearing instrument efficacy. Take ear impressions and prepare, design, and modify ear molds. Excludes "Audiologists" (29-1181).

Illustrative examples: Hearing Aid Fitter, Hearing Aid Technician, Hearing Instrument Specialist

29-2099 Health Technologists and Technicians, All Other

All health technologists and technicians not listed separately.

Illustrative examples: Dialysis Technician, Electroencephalogram (EEG) Technologist, Electroneurodiagnostic Technologist, Polysomnograph Tech

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. Includes environmental protection officers.

Illustrative examples: Environmental Health Sanitarian, Health and Safety Inspector, 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 examples: Construction Health and Safety Technician, Ergonomics Technician, Occupational Health and Safety Technologist (OHST)

29-9091 Athletic Trainers

Evaluate and advise individuals to assist recovery from or avoid athletic-related injuries or illnesses, or maintain peak physical fitness. May provide first aid or emergency care.

Illustrative example: Certified Athletic Trainer

29-9092 Genetic Counselors

Assess individual or family risk for a variety of inherited conditions, such as genetic disorders and birth defects. Provide information to other healthcare providers or to individuals and families concerned with the risk of inherited conditions. Advise individuals and families to support informed decisionmaking and coping methods for those at risk. May help conduct research related to genetic conditions or genetic counseling.

Illustrative examples: Chromosomal Disorders Counselor, Mitochondrial Disorders Counselor, Prenatal Genetic Counselor

29-9099 Healthcare Practitioners and Technical Workers, All Other

All healthcare practitioners and technical workers not listed separately.

Illustrative examples: Podiatric Technician, Traditional Chinese Herbalist

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HEALTHCARE SUPPORT OCCUPATIONS

31-1011 Home Health Aides

Provide routine individualized healthcare such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient.

Illustrative examples: Home Health Attendant, Home Hospice Aide

31-1013 Psychiatric Aides

Assist mentally impaired or emotionally disturbed patients, working under direction of nursing and medical staff. May assist with daily living activities, lead patients in educational and recreational activities, or accompany patients to and from examinations and treatments. May restrain violent patients. Includes psychiatric orderlies.

Illustrative examples: Mental Health Orderly, Psychiatric Nursing Aide, Psychiatric Technician Assistant

31-1014 Nursing Assistants

Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants. Excludes "Home Health Aides" (31-1011), "Orderlies" (31-1015), "Personal Care Aides" (39-9021), and "Psychiatric Aides" (31-1013).

Illustrative examples: Certified Nurse Aide, Certified Nursing Assistant, Nursing Care Attendant

31-1015 Orderlies

Transport patients to areas such as operating rooms or x-ray rooms using wheelchairs, stretchers, or moveable beds. May maintain stocks of supplies or clean and transport equipment. Psychiatric orderlies are included in "Psychiatric Aides" (31-1013). Excludes "Nursing Assistants" (31-1014).

Illustrative examples: Hospital Orderly, Medical Orderly, Surgical Orderly

31-2011 Occupational Therapy 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 examples: Certified Occupational Therapy Assistant, Licensed Occupational Therapist Assistant

31-2012 Occupational Therapy 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.

Illustrative examples: Occupational Rehabilitation Aide, Occupational Therapist Aide

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 examples: Licensed Physical Therapy Assistant, Physiotherapy 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 examples: Clinical Rehabilitation Aide, Physical Therapy Aide

31-9011 Massage Therapists

Perform therapeutic massages of soft tissues and joints. May assist in the assessment of range of motion and muscle strength, or propose client therapy plans.

Illustrative examples: Deep Tissue Massage Therapist, Licensed Massage Therapist, Swedish Masseur

31-9091 Dental Assistants

Assist dentist, set up equipment, prepare patient for treatment, and keep records.

Illustrative examples: Certified Dental Assistant, Orthodontic Assistant

31-9092 Medical Assistants

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information 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. Excludes "Physician Assistants" (29-1071).

Illustrative examples: Chiropractic Assistant, Morgue Attendant, Orthopedic Cast Specialist

31-9093 Medical Equipment Preparers

Prepare, sterilize, install, or clean laboratory or healthcare equipment. May perform routine laboratory tasks and operate or inspect equipment.

Illustrative examples: Central Sterile Supply Technician, Sterilization Specialist

31-9094 Medical Transcriptionists

Transcribe medical reports recorded by physicians and other healthcare practitioners using various electronic devices, covering office visits, emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcribe dictated reports and translate abbreviations into fully understandable form. Edit as necessary and return reports in either printed or electronic form for review and signature, or correction.

Illustrative examples: Medical Stenographer, Medical Transcriber, Pathology Transcriptionist

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: Pharmacist Assistant, Pharmacy Clerk, 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. Excludes "Nonfarm Animal Caretakers" (39-2021).

Illustrative examples: Veterinary Attendant, Veterinarian Helper

31-9097 Phlebotomists

Draw blood for tests, transfusions, donations, or research. May explain the procedure to patients and assist in the recovery of patients with adverse reactions.

Illustrative examples: Phlebotomy Technician, Venipuncturist

31-9099 Healthcare Support Workers, All Other

All healthcare support workers not listed separately.

Illustrative example: Ortho/Prosthetic Aide

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PROTECTIVE SERVICE OCCUPATIONS

33-1011 First-Line Supervisors of Correctional Officers

Directly supervise and coordinate activities of correctional officers and jailers.

Illustrative examples: Corrections Sergeant, Prison Guard Supervisor

33-1012 First-Line Supervisors of Police and Detectives

Directly supervise and coordinate activities of members of police force.

Illustrative examples: Commanding Officer Homicide Squad, Detective Lieutenant, Police Lieutenant, Traffic Sergeant

33-1021 First-Line Supervisors of Fire Fighting and Prevention Workers

Directly supervise and coordinate activities of workers engaged in fire fighting and fire prevention and control.

Illustrative examples: Fire Lieutenant, Municipal Fire Fighting and Prevention Supervisor, Supervising Fire Marshal

33-1099 First-Line Supervisors of Protective Service Workers, All Other

All protective service supervisors not listed separately above.

Illustrative examples: Animal Cruelty Investigation Supervisor, Security Guard Supervisor, Transportation Security Administration (TSA) Screener Supervisor

33-2011 Firefighters

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 assistance.

Illustrative examples: Fire Engine Pump Operator, Forest Firefighter, Marine Firefighter, Smoke Jumper

33-2021 Fire Inspectors and Investigators

Inspect buildings to detect fire hazards and enforce local ordinances and State laws, or investigate and gather facts to determine cause of fires and explosions.

Illustrative examples: Arson Investigator, Certified Vehicle Fire Investigator, Fire Hazard Inspector, Fire Prevention Inspector

33-2022 Forest Fire Inspectors and Prevention Specialists

Enforce fire regulations, inspect forest for fire hazards and recommend forest fire prevention or control measures. May report forest fires and weather conditions.

Illustrative examples: Environmental Protection Fire Control Officer, Forest Fire Control Officer, Wildfire Prevention Specialist

33-3011 Bailiffs

Maintain order in courts of law.

Illustrative examples: Court Bailiff, Court Security Officer, Deputy Bailiff

33-3012 Correctional Officers and Jailers

Guard inmates in penal or rehabilitative institutions in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point. Includes deputy sheriffs and police who spend the majority of their time guarding prisoners in correctional institutions.

Illustrative examples: Certified Detention Deputy, Juvenile Corrections 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. Excludes "Private Detectives and Investigators" (33-9021).
Illustrative examples: Deputy United States Marshal, Homicide Detective, Narcotics Investigator

33-3031 Fish and Game Wardens

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: Conservation Enforcement Officer, Wildlife and Game Protector, Wildlife Officer

33-3041 Parking Enforcement Workers

Patrol assigned area, such as public parking lot or city streets to issue tickets to overtime parking violators and illegally parked vehicles.
Illustrative examples: Meter Maid, Parking Enforcement Officer

33-3051 Police and Sheriff's Patrol Officers

Maintain order and protect life and property by enforcing local, tribal, State, or Federal laws and ordinances. Perform a combination of the following duties: patrol a specific area; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts.
Illustrative examples: Border Patrol Officer, Motorcycle Police, Park Police, State Trooper

33-3052 Transit and Railroad Police

Protect and police railroad and transit property, employees, or passengers.
Illustrative examples: Railroad Detective, Track Patrol, Transit Authority Police

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 Control Officer, Animal Warden, Dog Catcher, Humane Officer

33-9021 Private Detectives and Investigators

Gather, analyze, compile and report information regarding individuals or organizations to clients, or detect occurrences of unlawful acts or infractions of rules in private establishment.
Illustrative examples: Private Eye, Skip Tracer, Store 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 use 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 Investigator, Casino Surveillance Officer, Gambling Monitor

33-9032 Security Guards

Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules. May operate x-ray and metal detector equipment. Excludes "Transportation Security Screeners" (33-9093).

Illustrative examples: Bank Guard, Bodyguard, Bouncer

33-9091 Crossing Guards

Guide or control vehicular or pedestrian traffic at such places as streets, schools, railroad crossings, or construction sites.

Illustrative examples: Construction Site Crossing Guard, School Traffic Guard

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.

Illustrative examples: Beach Lifeguard, Outdoor Emergency Care Technician

33-9093 Transportation Security Screeners

Conduct screening of passengers, baggage, or cargo to ensure compliance with Transportation Security Administration (TSA) regulations. May operate basic security equipment such as x-ray machines and hand wands at screening checkpoints.

Illustrative examples: Airport Baggage Screener, Airport Security Screener, Transportation Security Officer, Transportation Security Administration (TSA) Screener

33-9099 Protective Service Workers, All Other

All protective service workers not listed separately.

Illustrative examples, Playground Monitor, Warrant Server

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35-000 – FOOD PREPARATION & SERVING RELATED OCCUPATIONS

35-1011 Chefs and Head Cooks

Direct and may participate in 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.

Illustrative examples: Executive Chef, Pastry Chef, Sous Chef

35-1012 First-Line Supervisors of Food Preparation and Serving Workers

Directly supervise and coordinate activities of workers engaged in preparing and serving food.

Illustrative examples: Banquet Supervisor, Bar Manager, Kitchen Supervisor

35-2011 Cooks, Fast Food

Prepare and cook food in a fast food restaurant with a limited menu. Duties of these cooks are limited to preparation of a few basic items and normally involve operating large-volume single-purpose cooking equipment.

Illustrative example: Fast Food Fry Cook

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, Galley Cook, Mess Cook, School Cook

35-2013 Cooks, Private Household

Prepare meals in private homes. Includes personal chefs.

Illustrative examples: Certified Personal Chef, Private Chef

35-2014 Cooks, Restaurant

Prepare, season, and cook dishes such as soups, meats, vegetables, or desserts in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.

Illustrative examples: Banquet Cook, Line Cook, Saucier

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. Excludes "Fast Food Cooks" (35-2011).

Illustrative example: Griddle Cook

35-2019 Cooks, All Other

All cooks not listed separately.

Illustrative examples: Falafal Cart Cook, Fraternity House Cook

35-2021 Food Preparation Workers

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: Fruit and Vegetable Parer, Salad Maker, Sandwich Maker

35-3011 Bartenders

Mix and serve drinks to patrons, directly or through waitstaff.

Illustrative examples: Barkeep, Mixologist, Taproom Attendant

35-3021 Combined Food Preparation and Serving Workers, Including Fast Food
Perform duties which combine preparing and serving food and nonalcoholic beverages.
Illustrative example: Mess Attendant

35-3022 Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
Serve food to diners at counter or from a steam table. Counter attendants who also wait tables are included in "Waiters and Waitresses" (35-3031).
Illustrative examples: Cafeteria Server, Ice Cream Server, Snack Bar Attendant

35-3031 Waiters and Waitresses
Take orders and serve food and beverages to patrons at tables in dining establishment. Excludes "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022).
Illustrative examples: Cocktail Server, Dining Car Server, Wine Steward

35-3041 Food Servers, Nonrestaurant
Serve food to individuals outside of a restaurant environment, such as in hotel rooms, hospital rooms, residential care facilities, or cars. Excludes "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: Boat Hop, Hospital Food Service Worker, Room Service Food Server

35-9011 Dining Room and Cafeteria Attendants and Bartender Helpers
Facilitate food service. Clean tables, remove dirty dishes, replace soiled table linens; set tables; replenish supply of clean linens, silverware, glassware, and dishes; supply service bar with food; and serve items such as water, condiments, and coffee to patrons.
Illustrative examples: Bar Back, Busser, Lunchroom Attendant

35-9021 Dishwashers
Clean dishes, kitchen, food preparation equipment, or utensils.
Illustrative examples: Dish Room Worker, Silverware Cleaner

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: Dining Room Host, Maitre D'

35-9099 Food Preparation and Serving Related Workers, All Other
All food preparation and serving related workers not listed separately.
Illustrative example: Kitchen Steward

37-000 – BUILDING & GROUNDS CLEANING & MAINTENANCE OCCUPATIONS

37-1011 First-Line Supervisors of Housekeeping and Janitorial Workers

Directly supervise and coordinate work activities of cleaning personnel in hotels, hospitals, offices, and other establishments.

Illustrative examples: Building Cleaning Supervisor, Cleaning Staff Supervisor, Custodial Supervisor

37-1012 First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers

Directly supervise and coordinate activities of workers engaged in landscaping or groundskeeping activities. Work may involve reviewing contracts to ascertain service, machine, and workforce requirements; answering inquiries from potential customers regarding methods, material, and price ranges; and preparing estimates according to labor, material, and machine costs.

Illustrative examples: Grounds Maintenance Supervisor, Head Greenskeeper, Horticultural Services Supervisor

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: Industrial Plant Custodian, School 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 and hospitals, in a clean and orderly manner. Duties may include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.

Illustrative examples: Chambermaid, House Cleaner, Housekeeping Staff

37-2019 Building Cleaning Workers, All Other

All building cleaning workers not listed separately.

Illustrative examples: Building Pressure Washer, Chimney Sweeper

37-2021 Pest Control Workers

Apply or release chemical solutions or toxic gases and set traps to kill or remove pests and vermin that infest buildings and surrounding areas.

Illustrative examples: Exterminator, Fumigator, Rodent Exterminator

37-3011 Landscaping and Groundskeeping Workers

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. Excludes "Farmworkers and Laborers, Crop, Nursery, and Greenhouse" (45-2092).

Illustrative examples: Greenskeeper, Hedge Trimmer, Lawn Caretaker, Shrub Planter

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. Excludes "Commercial Pilots" (53-2012) who dust or spray crops from aircraft.

Illustrative examples: Fruit Sprayer, Weed Sprayer

37-3013 Tree Trimmers and Pruners

Using sophisticated climbing and rigging techniques, 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, hand pruners, clippers, and power pruners. Works off the ground in the tree canopy and may use truck-mounted lifts. Excludes workers who primarily perform duties of "Pesticide Handlers, Sprayers, and Applicators, Vegetation" (37-3012) and "Landscaping and Groundskeeping Workers" (37-3011).

Illustrative examples: Tree Specialist, Tree Surgeon

37-3019 Grounds Maintenance Workers, All Other

All grounds maintenance workers not listed separately.

Illustrative example: Trailhead Maintenance Worker, Tree Trimmer Helper

39-000 – PERSONAL CARE & SERVICE OCCUPATIONS

39-1011 Gaming Supervisors

Supervise and coordinate activities of workers in assigned gaming areas. 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 services for guests in hotels/casinos. May address service complaints. Excludes "Slot Supervisors" (39-1012).

Illustrative examples: Cardroom Supervisor, Pit Boss, Table Games Supervisor

39-1012 Slot Supervisors

Supervise and coordinate activities of slot department workers to provide service to patrons. Handle and settle complaints of players. Verify and pay off jackpots. Reset slot machines after payoffs. Make repairs or adjustments to slot machines or recommend removal of slot machines for repair. Report hazards and enforce safety rules.

Illustrative example: Casino Slot Supervisor, Electronic Gaming Device Supervisor, Slot Key Person

39-1021 First-Line Supervisors of Personal Service Workers

Directly supervise and coordinate activities of personal service workers, such as flight attendants, hairdressers, or caddies.

Illustrative examples: Animal Trainer Supervisor, Caddy Master, Recreation Attendant Supervisor

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: Guide Dog Trainer, Horse Breaker, Marine Mammal Trainer

39-2021 Nonfarm Animal Caretakers

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. Excludes "Veterinary Assistants and Laboratory Animal Caretakers" (31-9096).

Illustrative examples: Animal Shelter Worker, Dog Groomer, Kennel Worker, Zookeeper

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. Distribute winnings or collect players' money or chips. May compare the house's hand against players' hands.

Illustrative examples: Blackjack Dealer, Craps Dealer, Poker Dealer, Roulette Dealer

39-3012 Gaming and Sports Book Writers and Runners

Post information enabling patrons to wager on various races and sporting events. Assist in the operation of games such as keno and bingo. May operate random number generating equipment and announce the numbers for patrons. Receive, verify, and record patrons' wagers. Scan and process winning tickets presented by patrons and payout winnings for those wagers.

Illustrative examples: Betting Clerk, Keno Runner, Race Book Writer

39-3019 Gaming Service Workers, All Other

All gaming service workers not listed separately.

Illustrative examples: Pit Clerk, Proposition Player, Shill

39-3021 Motion Picture Projectionists

Set up and operate motion picture projection and related sound reproduction equipment.

Illustrative examples: Film Projector Operator, Movie Projectionist

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: Theater Usher, Ticket Collector

39-3091 Amusement and Recreation Attendants

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 Caddy, Ski Lift Operator

39-3092 Costume Attendants

Select, fit, and take care of costumes for cast members, and aid entertainers. May assist with multiple costume changes during performances.

Illustrative examples: Theatrical Wardrobe Dresser, Wardrobe Attendant

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, Coat Checker, Washroom Attendant

39-3099 Entertainment Attendants and Related Workers, All Other

All entertainment attendants and related workers not listed separately.

39-4011 Embalmers

Prepare bodies for interment in conformity with legal requirements.

Illustrative examples: Licensed Embalmer, Restorative Art Embalmer

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: Funeral Home Assistant, Mortician Helper, Pallbearer

39-4031 Morticians, Undertakers, and Funeral Directors

Perform various tasks to arrange and direct funeral services, such as coordinating transportation of body to mortuary, interviewing family or other authorized person to arrange details, selecting pallbearers, aiding with the selection of officials for religious rites, and providing transportation for mourners. Excludes “Funeral Service Managers” (11-9061).

Illustrative examples: Certified Mortician, Funeral Arranger

39-5011 Barbers

Provide barbering services, such as cutting, trimming, shampooing, and styling hair, trimming beards, or giving shaves.

Illustrative examples: Barber Apprentice, Master Barber

39-5012 Hairdressers, Hairstylists, and Cosmetologists

Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May apply makeup, dress wigs, perform hair removal, and provide nail and skin care services. Excludes “Makeup Artists, Theatrical and Performance” (39-5091), “Manicurists and Pedicurists” (39-5092), and “Skincare Specialists” (39-5094). *Illustrative examples: Beautician, Wig Stylist*

39-5091 Makeup Artists, Theatrical and Performance

Apply makeup to performers to reflect period, setting, and situation of their role.

Illustrative example: Special Effects Makeup Artist

39-5092 Manicurists and Pedicurists

Clean and shape customers' fingernails and toenails. May polish or decorate nails.

Illustrative examples: Fingernail Sculptor, Nail Technician

39-5093 Shampooers

Shampoo and rinse customers' hair.

Illustrative examples: Scalp Treatment Specialist, Shampoo Assistant

39-5094 Skincare Specialists

Provide skincare treatments to face and body to enhance an individual's appearance. Includes electrologists and laser hair removal specialists.

Illustrative examples: Facialist, Medical Esthetician

39-6011 Baggage Porters and Bellhops

Handle baggage for travelers at transportation terminals or for guests at hotels or similar establishments.

Illustrative examples: Bellstaff, Hotel Baggage Handler, 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.

Illustrative examples: Activities Concierge, Hotel Concierge, Hotel Guest Service Agent

39-7011 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: Historical Site Guide, Museum Guide, Sightseeing Guide

39-7012 Travel Guides

Plan, organize, and conduct long distance travel, tours, and expeditions for individuals and groups.

Illustrative examples: Cruise Director, River Expedition Guide

39-9011 Childcare Workers

Attend to children at schools, businesses, private households, and childcare institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play. Excludes "Preschool Teachers, Except Special Education" (25-2011) and "Teacher Assistants" (25-9041).

Illustrative examples: Au Pair, Daycare Provider, Nanny

39-9021 Personal Care Aides

Assist the elderly, convalescents, or persons with disabilities with daily living activities at the person's home or in a care facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide assistance at non-residential care facilities. May advise families, the elderly, convalescents, and persons with disabilities regarding such things as nutrition, cleanliness, and household activities.

Illustrative examples: Blind Escort, Elderly Companion, Geriatric Personal Care Aide

39-9031 Fitness Trainers and Aerobics Instructors

Instruct or coach groups or individuals in exercise activities. Demonstrate techniques and form, observe participants, and explain to them corrective measures necessary to improve their skills. Excludes teachers classified in 25-0000 Education, Training, and Library Occupations. Excludes "Coaches and Scouts" (27-2022) and "Athletic Trainers" (29-9091).

Illustrative examples: Personal Trainer, Yoga Instructor

39-9032 Recreation Workers

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: Activities Aide, Camp Counselor, Playground Worker

39-9041 Residential Advisors

Coordinate activities in residential facilities in secondary and college dormitories, group homes, or similar establishments. Order supplies and determine need for maintenance, repairs, and furnishings. May maintain household records and assign rooms. May assist residents with problem solving or refer them to counseling resources.

Illustrative examples: Dormitory Counselor, House Parent, Residence Life Coordinator

39-9099 Personal Care and Service Workers, All Other

All personal care and service workers not listed separately.

Illustrative examples: Butler, House Sitter, Shoe Shiner, Valet

41-000 – SALES AND RELATED OCCUPATIONS

41-1011 First-Line Supervisors of Retail Sales Workers

Directly supervise and coordinate activities of retail sales workers in an establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.

Illustrative examples: Cashier Supervisor, Delicatessen Department Manager

41-1012 First-Line Supervisors 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: Insurance Sales Supervisor, Real Estate Sales Supervisor, Telemarketer Supervisor

41-2011 Cashiers

Receive and disburse money in establishments other than financial institutions. May use electronic scanners, cash registers, or related equipment. May process credit or debit card transactions and validate checks. Excludes "Gaming Cage Persons and Booth Cashiers" (41-2012).

Illustrative examples: Cash Register Operator, Grocery Checker, Toll Collector

41-2012 Gaming Change Persons and Booth Cashiers

Exchange coins, tokens, and chips for patrons' money. May issue payoffs and obtain customer's signature on receipt. 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. Excludes "Cashiers" (41-2011).

Illustrative example: Mutuel Teller, Slot Attendant

41-2021 Counter and Rental Clerks

Receive orders, generally in person, for repairs, rentals, and services. May describe available options, compute costs, and accept payment. Excludes "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022), "Hotel, Motel, and Resort Desk Clerks" (43-4081), "Order Clerks" (43-4151), and "Reservation and Transportation Ticket Agents and Travel Clerks" (43-4181).

Illustrative examples: Car Rental Agent, Dry Cleaning Counter Clerk

41-2022 Parts Salespersons

Sell spare and replacement parts and equipment in repair shop or parts store.

Illustrative examples: Auto Parts Salesperson, Electronic Parts Salesperson

41-2031 Retail Salespersons

Sell merchandise, such as furniture, motor vehicles, appliances, or apparel to consumers. Excludes "Cashiers" (41-2011).

Illustrative examples: Used Car Salesperson, Women's Apparel Salesperson

41-3011 Advertising Sales Agents

Sell or solicit advertising space, time, or media in publications, signage, TV, radio, or the Internet. Includes individuals who obtain leases for outdoor advertising sites or persuade retailers to use sales promotion display items.

Illustrative examples: Advertising Account Executive, Display Advertising Sales Representative, Yellow Pages Space Salesperson

41-3021 Insurance Sales Agents

Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company.

Illustrative examples: Life Insurance Salesperson, Pension Agent

41-3031 Securities, Commodities, and Financial Services Sales Agents

Buy and sell securities or commodities in investment and trading firms, or provide financial services to businesses and individuals. May advise customers about stocks, bonds, mutual funds, commodities, and market conditions.

Illustrative examples: Investment Banker, Securities Trader, Stock Broker

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. May also describe, plan, and arrange itineraries and sell tour packages. May assist in resolving clients' travel problems.

Illustrative examples: Corporate Travel Expert, Travel Service Consultant

41-3099 Sales Representatives, Services, All Other

All services sales representatives not listed separately.

Illustrative examples: Business Services Sales Representative, Membership Solicitor, Pest Control Service Sales Agent

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. Excludes "Sales Engineers" (41-9031).

Illustrative examples: Pharmaceutical Sales Representative, Surgical Instruments Sales Representative, Wholesale Ultrasonic Equipment Salesperson

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: Hotel Supplies Salesperson, Pulpwood Dealer, Wholesale Diamond Broker

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, In-Store Demonstrator

41-9012 Models

Model garments or other apparel and accessories for prospective buyers at fashion shows, private showings, or retail establishments. May pose for photos to be used in magazines or advertisements. May pose as subject for paintings, sculptures, and other types of artistic expression.

Illustrative examples: Fashion Model, Hand Model, 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.

Illustrative example: Licensed Real Estate Broker

41-9022 Real Estate Sales Agents

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. Includes agents who represent buyer.

Illustrative examples: Apartment Rental 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. Excludes "Engineers" (17-2011 through 17-2199) whose primary function is not marketing or sales.

Illustrative examples: Aerospace Products Sales Engineer, Missile Navigation Systems Sales Engineer, Nuclear Equipment Sales Engineer

41-9041 Telemarketers

Solicit donations or orders for goods or services over the telephone.

Illustrative examples: Telemarketing Sales Representative, 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: Newspaper Carrier, Peddler, Souvenir Street Vendor

41-9099 Sales and Related Workers, All Other

All sales and related workers not listed separately.

Illustrative examples: Auctioneer, Blood Donor Recruiter, Personal Shopper, Store Gift Wrap Associate

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43-000 – OFFICE & ADMINISTRATIVE SUPPORT OCCUPATIONS

43-1011 First-Line Supervisors of Office and Administrative Support Workers

Directly supervise and coordinate the activities of clerical and administrative support workers.

Illustrative examples: Clerical Supervisor, Payroll Supervisor, Teller Supervisor

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: Private Branch Exchange Operator, Telephone Answering Service Operator, Telephone Switchboard Operator

43-2021 Telephone Operators

Provide information by accessing alphabetical, geographical, or other 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: Directory Assistance Operator, Long Distance Operator, Information Operator

43-2099 Communications Equipment Operators, All Other

All communications equipment operators not listed separately.

Illustrative example: Fax Machine Operator

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; and keeping records of collection and status of accounts.

Illustrative examples: Collection Agent, Debt Collector, Repossessor

43-3021 Billing and Posting Clerks

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: Invoice Control Clerk, Patient Account Representative, Statement Processor

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. Excludes "Payroll and Timekeeping Clerks" (43-3051).

Illustrative examples: Accounts Receivable Clerk, Bookkeeper, Mortgage Accounting Clerk

43-3041 Gaming Cage Workers

In a gaming establishment, conduct financial transactions for patrons. May reconcile daily summaries of transactions to balance books. May 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.

Illustrative examples: Cage Cashier, Casino Cashier

43-3051 Payroll and Timekeeping Clerks

Compile and record employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions, or prepare paychecks. Excludes "Bookkeeping, Accounting, and Auditing Clerks" (43-3031).

Illustrative example: Time and Attendance Clerk, Timekeeper

43-3061 Procurement Clerks

Compile information and records to draw up purchase orders for procurement of materials and services.

Illustrative examples: Procurement Assistant, 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

43-3099 Financial Clerks, All Other

All financial clerks not listed separately.

Illustrative examples: Bank Vault Attendant, Financial Reserve Clerk, Safety Deposit Clerk

43-4011 Brokerage Clerks

Perform duties related to the purchase, sale or holding of securities. Duties include writing orders for stock purchases or 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: Commodities Clerk, Dividend Clerk

43-4021 Correspondence Clerks

Compose letters or electronic correspondence 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 preparing correspondence.

Illustrative examples: Fan Mail Editor, Medicare Correspondence Representative

43-4031 Court, Municipal, and License Clerks

Perform clerical duties for courts of law, municipalities, or 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; and record data, administer tests, or collect fees. Clerks of Court are classified in "Managers, All Other" (11-9199).

Illustrative examples: Circuit Court Clerk, Motor Vehicle License Clerk, Warrant Clerk

43-4041 Credit Authorizers, Checkers, and Clerks

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: Charge Authorizer, Commercial Credit Reviewer, Credit Rating Checker

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. Excludes individuals whose duties are primarily installation, sales, or repair.

Illustrative examples: Customer Complaint Clerk, Passenger Relations Representative, Warranty Clerk

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: Medical Interviewer, Public Housing Interviewer, Unemployment Benefits Claims Taker

43-4071 File Clerks

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: Document Clerk, Records Clerk

43-4081 Hotel, Motel, and Resort Desk Clerks

Accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys or cards, 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: Hotel Front Desk Clerk, Hotel Registration Clerk

43-4111 Interviewers, Except Eligibility and Loan

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, Outpatient Interviewing Clerk

43-4121 Library Assistants, Clerical

Compile records, sort, shelve, issue, and receive library materials such as books, electronic media, 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. Excludes "Library Technicians" (25-4031).

Illustrative examples: Braille and Talking Books Clerk, Circulation Clerk, Microfilm Clerk

43-4131 Loan Interviewers and Clerks

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 Processor, Mortgage Loan Closer

43-4141 New Accounts Clerks

Interview persons desiring to open accounts in financial institutions. Explain account services available to prospective customers and assist them in preparing applications.

Illustrative examples: Banking Services Clerk, New Accounts Banking Representative

43-4151 Order Clerks

Receive and process incoming orders for materials, merchandise, classified ads, or services such as repairs, installations, or rental of facilities. Generally receives orders via mail, phone, fax, or other electronic means. Duties include informing customers of receipt, prices, shipping dates, and delays; preparing contracts; and handling complaints. Excludes "Dispatchers, Except Police, Fire, and Ambulance" (43-5032) who both dispatch and take orders for services.

Illustrative examples: Catalogue Clerk, Classified Ad Clerk, Subscription Clerk

43-4161 Human Resources Assistants, Except Payroll and Timekeeping

Compile and keep personnel records. Record data for each employee, such as address, weekly earnings, absences, amount of sales or production, supervisory reports, and date of and reason for termination. May prepare reports for employment records, file employment records, or search employee files and furnish information to authorized persons.

Illustrative examples: HR Clerk, Personnel Clerk

43-4171 Receptionists and Information Clerks

Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization. Excludes "Switchboard Operators, Including Answering Service" (43-2011).

Illustrative examples: Appointment Clerk, Front Desk Receptionist, Land Leasing Information Clerk

43-4181 Reservation and Transportation Ticket Agents and Travel Clerks

Make and confirm reservations for transportation or lodging, or sell transportation tickets. May check baggage and direct passengers to designated concourse, pier, or track; deliver tickets, contact individuals and groups to inform them of package tours; or provide tourists with travel or transportation information. Excludes "Travel Agents" (41-3041), "Hotel, Motel, and Resort Desk Clerks" (43-4081), and "Cashiers" (41-2011) who sell tickets for local transportation. *Illustrative examples: Airline Ticket Agent, Gate Agent, Hotel Reservationist, Train Reservation Clerk*

43-4199 Information and Record Clerks, All Other

All information and record clerks not listed separately.

Illustrative examples: Election Clerk, Probate Clerk, Student Admissions Clerk

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: Cargo Router, Freight Shipping Agent, Ramp Service Agent

43-5021 Couriers and Messengers

Pick up and deliver messages, documents, packages, and other items between offices or departments within an establishment or directly to other business concerns, traveling by foot, bicycle, motorcycle, automobile, or public conveyance. Excludes "Light Truck or Delivery Services Drivers" (53-3033).

Illustrative examples: Bicycle Messenger, Laboratory Courier, Office Runner

43-5031 Police, Fire, and Ambulance Dispatchers

Operate radio, telephone, or computer equipment at emergency response centers. Receive reports from the public of crimes, disturbances, fires, and medical or police emergencies. Relay information to law enforcement and emergency response personnel. May maintain contact with caller until responders arrive.

Illustrative examples: Emergency Operator, 911 Operator, Police Radio 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: Taxicab Dispatcher, Tow Truck Dispatcher, Train Dispatcher

43-5041 Meter Readers, Utilities

Read meter and record consumption of electricity, gas, water, or steam.

Illustrative examples: Electric Meter Reader, Gas Meter Reader, 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; and examine mail for correct postage.

Illustrative examples: Bulk Mail Carrier, Parcel Post Clerk, Postal Service Window 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, Rural 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. 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. Excludes "Postal Service Clerks" (43-5051) and "Postal Service Mail Carriers" (43-5052).

Illustrative examples: Flat Sorting Machine Clerk, Mail Forwarding System Markup Clerk

43-5061 Production, Planning, and Expediting Clerks

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. Excludes "Weighers, Measurers, Checkers, and Samplers, Recordkeeping" (43-5111).

Illustrative examples: Expeditor, Material Control Clerk, Production Scheduler

43-5071 Shipping, Receiving, and Traffic Clerks

Verify and maintain 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. Excludes "Stock Clerks and Order Fillers" (43-5081) and "Weighers, Measurers, Checkers, and Samplers, Recordkeeping" (43-5111).

Illustrative examples: Incoming Freight Clerk, Route Delivery Clerk, Store Receiving Clerk

43-5081 Stock Clerks and Order Fillers

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. Excludes "Laborers and Freight, Stock, and Material Movers, Hand" (53-7062), and "Shipping, Receiving, and Traffic Clerks" (43-5071).

Illustrative examples: Inventory Control Clerk, Tool Crib Attendant, 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. Includes workers who collect and keep record of samples of products or materials. Excludes "Inspectors, Testers, Sorters, Samplers, and Weighers" (51-9061).

Illustrative examples: Cheese Weigher, Scale Attendant, Weighing Station Operator

43-6011 Executive Secretaries and Executive 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. Excludes "Secretaries" (43-6012 through 43-6014).

Illustrative example: Executive Assistant

43-6012 Legal Secretaries

Perform secretarial duties using legal terminology, procedures, and documents. Prepare legal papers and correspondence, such as summonses, complaints, motions, and subpoenas. May also assist with legal research.

Illustrative examples: Law Secretary, Legal Administrative Assistant

43-6013 Medical Secretaries

Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.

Illustrative examples: Dental Secretary, Psychiatric Secretary

43-6014 Secretaries and Administrative Assistants, 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. Excludes legal, medical, and executive secretaries (43-6011 through 43-6013).

Illustrative examples: Office Secretary, Personal Secretary, School Secretary

43-9011 Computer Operators

Monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. Monitor and respond to operating and error messages. May enter commands at a computer terminal and set controls on computer and peripheral devices. Excludes "Computer Occupations" (15-1100) and "Data Entry Keyers" (43-9021).

Illustrative examples: Computer Peripheral Equipment Operator, Console Operator

43-9021 Data Entry Keyers

Operate data entry device, such as keyboard or photo composing perforator. Duties may include verifying data and preparing materials for printing. Excludes "Word Processors and Typists" (43-9022).

Illustrative examples: Data Input Clerk, Data Typist

43-9022 Word Processors and Typists

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. Excludes "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, Transcription Typist

43-9031 Desktop Publishers

Format typescript and graphic elements using computer software to produce publication-ready material.

Illustrative examples: Desktop Publishing Specialist, Electronic Publisher

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. Excludes "Claims Adjusters, Examiners, and Investigators" (13-1031).

Illustrative examples: Insurance 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: Direct Mail Clerk, Mailroom Clerk, Packaging Clerk

43-9061 Office Clerks, General

Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring knowledge of office 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. Excludes "Computer Operators" (43-9011), "Mail Clerks and Mail Machine Operators, Except Postal Service" (43-9051) and "Billing and Posting Clerks" (43-3021).

Illustrative examples: Coin Wrapping Machine Operator, Copy Machine Operator

43-9081 Proofreaders and Copy Markers

Read transcript or proof type setup to detect and mark for correction any grammatical, typographical, or compositional errors. Excludes workers whose primary duty is editing copy. Includes proofreaders of Braille.

Illustrative examples: Braille Proofreader, Copy Reader, Editorial Assistant

43-9111 Statistical Assistants

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. Includes actuarial clerks.

Illustrative examples: Actuarial Assistant, Statistical Clerk

43-9199 Office and Administrative Support Workers, All Other

All office and administrative support workers not listed separately.

Illustrative examples: Envelope Stuffer, Fingerprint Clerk, Notary Public

45-000 – FARMING, FISHING & FORESTRY OCCUPATIONS

45-1011 First-Line Supervisors of Farming, Fishing, and Forestry Workers

Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers. Excludes "First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers" (37-1012).

Illustrative examples: Corral Boss, Cranberry Bog Supervisor, Fish Hatchery Supervisor

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, Grain Sampler, Milk Tester

45-2021 Animal Breeders

Select and breed animals according to their genealogy, characteristics, and offspring. May require knowledge of artificial insemination techniques and equipment use. May involve keeping records on heats, birth intervals, or pedigree. Excludes "Nonfarm Animal Caretakers" (39-2021) who may occasionally breed animals as part of their other caretaking duties. Excludes "Animal Scientists" (19-1011) whose primary function is research.

Illustrative examples: Dairy Husbandry Worker, 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. Excludes "Agricultural Inspectors" (45-2011).

Illustrative examples: Cotton Grader, Egg Grader, Fruit Sorter, Meat Grader

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: Combine Operator, Hay Baler, Tractor Operator

45-2092 Farmworkers and Laborers, Crop, Nursery, and Greenhouse

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; or cleaning, grading, sorting, packing, and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities. Excludes "Graders and Sorters, Agricultural Products" (45-2041) and "Forest, Conservation, and Logging Workers" (45-4011 through 45-4029).

Illustrative examples: Greenhouse Transplanter, Pecan Gatherer, Pepper Picker

45-2093 Farmworkers, Farm, Ranch, and Aquacultural 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. Includes workers who shear wool from sheep, and collect eggs in hatcheries.

Illustrative examples: Cattle Brander, Sheep Shearer, Shrimp Pond Laborer

45-2099 Agricultural Workers, All Other

All agricultural workers not listed separately.

Illustrative examples: Crop Scout, Irrigation Worker

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. Aquacultural laborers who work on fish farms are included in "Farmworkers, Farm, Ranch, and Aquacultural Animals" (45-2093).

Illustrative examples: Seaweed Harvester, Wild Oyster Harvester

45-3021 Hunters and Trappers

Hunt and trap wild animals for human consumption, fur, feed, bait, or other purposes.

Illustrative examples: Bird Trapper, Deer Hunter, Predatory Animal Trapper

45-4011 Forest and Conservation Workers

Under supervision, perform manual labor necessary to develop, maintain, or protect areas such as forests, forested areas, woodlands, wetlands, and rangelands through such activities as raising and transporting seedlings; combating insects, pests, and diseases harmful to plant life; and building structures to control water, erosion, and leaching of soil. Includes forester aides, seedling pullers, and tree planters.

Illustrative examples: Forestry Laborer, Rangelands Conservation Laborer, Reforestation Worker, Wetlands Conservation Laborer

45-4021 Fallers

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: Lumberjack, Pulpwood Cutter, 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. Logging truck drivers are included in "Heavy and Tractor-Trailer Truck Drivers" (53-3032).

Illustrative examples: Grapple Skidder Operator, Log Hauler, Logging Tractor Operator, Lumber Stacker Operator

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. Excludes "Buyers and Purchasing Agents, Farm Products" (13-1021).

Illustrative examples: Log Check Scaler, Timber Estimator, Veneer Grader

45-4029 Logging Workers, All Other

All logging workers not listed separately.

Illustrative examples: Log Roper, Rigging Slinger, Timber Hand

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47-000 – CONSTRUCTION & EXTRACTION OCCUPATIONS

47-1011 First-Line Supervisors of Construction Trades and Extraction Workers

Directly supervise and coordinate activities of construction or extraction workers.

Illustrative examples: Carpenter Supervisor, Quarry Boss, Rig Supervisor, Solar Panel Installation Supervisor

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, Boiler 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. Excludes "Stonemasons" (47-2022). Installers of mortarless segmental concrete masonry wall units are classified in "Landscaping and Groundskeeping Workers" (37-3011).

Illustrative examples: Adobe Layer, Brick Chimney Builder, Refractory Bricklayer

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: Curbstone Setter, Granite Setter, Monument 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; and wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Includes brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways.

Illustrative examples: Building Carpenter, Custom Wood Stair Builder, Wood Floor Layer

47-2041 Carpet Installers

Lay and install carpet from rolls or blocks on floors. Install padding and trim flooring materials. Excludes "Floor Layers, Except Carpet, Wood, and Hard Tiles" (47-2042).

Illustrative examples: Carpet Layer, Wall-to-Wall Carpet Installer

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 Layer, Cork Floor Installer, Linoleum Installer, Shock-Absorption Floor Installer

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 Scraper, 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 Ceiling 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; and use saws to cut expansion joints. Installers of mortarless segmental concrete masonry wall units are classified in "Landscaping and Groundskeeping Workers" (37-3011).

Illustrative examples: Cement Patcher, Concrete Floor Installer, Concrete Swimming Pool 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 examples: Onyx-Chip Terrazzo Worker, Terrazzo Grinder, Terrazzo Setter

47-2061 Construction Laborers

Perform tasks involving physical labor at construction 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, and clean up rubble, debris and other waste materials. May assist other craft workers. Construction laborers who primarily assist a particular craft worker are classified under "Helpers, Construction Trades" (47-3010). Excludes "Hazardous Materials Removal Workers" (47-4041).

Illustrative examples: Air Hammer Operator, Construction Craft Laborer, Construction Trench Digger

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. Includes concrete and asphalt paving machine operators, form tampers, tamping machine operators, and stone spreader operators.

Illustrative examples: Asphalt Roller Operator, Blacktop-Paver 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: Hydraulic Pile Hammer Operator, Vibratory Pile Driver

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. Excludes "Crane and Tower Operators" (53-7021) and "Extraction Workers" (47-5000).

Illustrative examples: Bulldozer Operator, Steam Shovel Operator

47-2081 Drywall and Ceiling Tile Installers

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. Includes 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. Excludes "Carpet Installers" (47-2041), "Carpenters" (47-2031), and "Tile and Marble Setters" (47-2044).

Illustrative examples: Acoustical Ceiling Installer, Drywall Finisher, Sheet Rock Hanger

47-2082 Tapers

Seal joints between plasterboard or other wallboard to prepare wall surface for painting or papering.

Illustrative examples: Drywall Taper, 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. Excludes "Security and Fire Alarm Systems Installers" (49-2098).

Illustrative examples: Electrical Sign Wirer, Master Electrician, Solar Photovoltaic 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: Plate Glass Installer, Stained Glass Joiner

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: Ceiling Insulation Blower, Composition Weatherboard Installer, Interior Surface Insulation Worker

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, Pipe Insulator

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. Excludes "Paperhangers" (47-2142). *Illustrative examples: Bridge Painter, House Painter, Traffic Line Painter*

47-2142 Paperhangers

Cover interior walls or ceilings of rooms with decorative wallpaper or fabric, or attach advertising posters on surfaces such as walls and billboards. May remove old materials or prepare surfaces to be papered.

Illustrative examples: Billboard Poster, Wall Covering Installer, 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. Excludes "Welders, Cutters, Solderers, and Brazers" (51-4121).

Illustrative examples: Cast-Iron Drain Pipe Layer, Trench Pipe Layer, Water Main Pipe Layer

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. Includes sprinklerfitters.

Illustrative examples: Fire Sprinkler Installer, Solar Thermal Installer, Sprinkler Fitter

47-2161 Plasterers and Stucco Masons

Apply interior or exterior plaster, cement, stucco, or similar materials. May also set ornamental plaster.

Illustrative examples: Ornamental Plasterer, Stucco Worker, Swimming Pool 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. Includes rod busters. *Illustrative examples: Post Tensioning Iron Worker, Steel Rod Buster*

47-2181 Roofers

Cover roofs of structures with shingles, slate, asphalt, aluminum, wood, or related materials. May spray roofs, sidings, and walls with material to bind, seal, insulate, or soundproof sections of structures.

Illustrative examples: Hot Tar Roofer, Shingles Roofer, Terra Cotta Roofer

47-2211 Sheet Metal Workers

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; or inspecting, assembling, and smoothing seams and joints of burred surfaces. Includes sheet metal duct installers who install prefabricated sheet metal ducts used for heating, air conditioning, or other purposes.

Illustrative examples: Heating, Ventilation, and Air Conditioning (HVAC) Sheet Metal Installer; Sheet Metal Former; 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. Excludes "Reinforcing Iron and Rebar Workers" (47-2171).

Illustrative examples: Bridge Ironworker, Precast Concrete Ironworker, Wind Turbine Erector

47-2231 Solar Photovoltaic Installers

Assemble, install, or maintain solar photovoltaic (PV) systems on roofs or other structures in compliance with site assessment and schematics. May include measuring, cutting, assembling, and bolting structural framing and solar modules. May perform minor electrical work such as current checks. Excludes solar thermal installers who are included in "Plumbers, Pipefitters, and Steamfitters" (47-2152). Excludes solar PV electricians who are included in "Electricians" (47-2111).

Illustrative examples: Photovoltaic (PV) Installation Technician, Solar PV Installer

47-3011 Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters

Help brickmasons, blockmasons, stonemasons, or tile and marble setters by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist brickmasons, blockmasons, and stonemasons or tile and marble setters are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Brick Carrier, Brick Washer, Refractory Tile Helper

47-3012 Helpers—Carpenters

Help carpenters by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist carpenters are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Carpenter Assistant, Hardwood Floor Installation Helper

47-3013 Helpers—Electricians

Help electricians by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist electricians are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Marine Electrician Helper, Stage Electrician Helper

47-3014 Helpers—Painters, Paperhangers, Plasterers, and Stucco Masons

Help painters, paperhangers, plasterers, or stucco masons by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist painters, paperhangers, plasterers, or stucco masons are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Bridge Painter Helper, Dry Plasterer Helper, Wallpaperer Helper

47-3015 Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters

Help plumbers, pipefitters, steamfitters, or pipelayers by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist plumbers, pipefitters, steamfitters, or pipelayers are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Industrial Gas Fitter Helper, Marine Pipefitter Helper, Plumber Assistant, Water Main Installer Helper

47-3016 Helpers—Roofers

Help roofers by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Construction laborers who do not primarily assist roofers are classified under "Construction Laborers" (47-2061). Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Hot Tar Roofer Helper, Shingles Roofer Helper, Slate Roofer Helper, Terra Cotta Roofer Helper

47-3019 Helpers, Construction Trades, All Other

All construction trades helpers not listed separately.

Illustrative examples: Cellulose Insulation Helper, Drywall Hanger Helper, Rod Buster Helper, Terrazzo Finisher Helper

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: Electrical Inspector, Elevator Inspector, Highway Inspector

47-4021 Elevator Installers and Repairers

Assemble, install, repair, or maintain electric or hydraulic freight or passenger elevators, escalators, or dumbwaiters.

Illustrative examples: Elevator Mechanic, Escalator Installer, Hydraulic Elevator Constructor

47-4031 Fence Erectors

Erect and repair fences and fence gates, 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, or contaminated soil. 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 Abatement Worker, Decontamination Worker, Irradiated Fuel Handler

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. Excludes "Tree Trimmers and Pruners" (37-3013).

Illustrative examples: 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. Includes ballast cleaning machine operators and railroad bed tamping machine operators.

Illustrative examples: Rail Maintenance Worker, Track Repairer, Track Surfacing Machine Operator

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: Electric Sewer Cleaning Machine Operator, Septic Tank Cleaner, Sewage Screen Operator

47-4091 Segmental Pavers

Lay out, cut, and place segmental paving units. Includes installers of bedding and restraining materials for the paving units.

Illustrative examples: Concrete Pavement Installer, Paving Stone Installer

47-4099 Construction and Related Workers, All Other

All construction and related workers not listed separately.

Illustrative examples: Aluminum Pool Installer, Waterproofer

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 underground oil and gas, or remove core samples for testing during oil and gas exploration. Excludes "Earth Drillers, Except Oil and Gas" (47-5021).

Illustrative examples: Oil Well Cable Tool Operator, Oil Well Driller

47-5013 Service Unit Operators, Oil, Gas, and Mining

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. Includes fishing-tool technicians.

Illustrative example: Well Servicing Rig Operator

47-5021 Earth Drillers, Except Oil and Gas

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. Includes horizontal and earth boring machine operators.

Illustrative examples: Blast Hole Driller, Churn Driller, Earth Auger 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. Includes seismograph shooters. Excludes "Earth Drillers, Except Oil and Gas" (47-5021) who may also work with explosives.

Illustrative examples: Blast Setter, Dynamiter, Explosive Technician

47-5041 Continuous Mining Machine Operators

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

Illustrative examples: Continuous Mining Machine Lode Miner, Self-Propelled Mining Machine Operator

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. Includes shale planers.

Illustrative examples: Bore Miner Operator, Clay Mine Cutting Machine Operator, Long Wall Shear Operator

47-5049 Mining Machine Operators, All Other

All mining machine operators not listed separately.

Illustrative examples: Dry Placer Machine Operator, Rock Dust Sprayer

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, Sandstone Splitter

47-5061 Roof Bolters, Mining

Operate machinery to install roof support bolts in underground mine.

Illustrative examples: Roof Bolting Coal Miner, Underground Bolting Machine Operator, Underground Roof Bolter

47-5071 Roustabouts, Oil and Gas

Assemble or repair oil field equipment using hand and power tools. Perform other tasks as needed.

Illustrative examples: Oil Field Roustabout, Oil Rig Roughneck

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 requiring less skill. Duties include supplying equipment or cleaning work area. Apprentice workers are classified with the appropriate skilled construction trade occupation (47-2011 through 47-2231).

Illustrative examples: Blaster Helper, Mining Helper, Roof Bolter Helper

47-5099 Extraction Workers, All Other

All extraction workers not listed separately.

Illustrative example: Sandfill Operator

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49-000 – INSTALLATION, MAINTENANCE & REPAIR OCCUPATIONS

49-1011 First-Line Supervisors of Mechanics, Installers, and Repairers

Directly supervise and coordinate the activities of mechanics, installers, and repairers. Excludes team or work leaders. *Illustrative example: Automobile Body Repair Supervisor, Fleet Maintenance Supervisor, Railroad Car Repair Supervisor*

49-2011 Computer, Automated Teller, and Office Machine Repairers

Repair, maintain, or install computers, word processing systems, automated teller machines, and electronic office machines, such as duplicating and fax machines. *Illustrative examples: ATM Servicer, Cash Register Servicer, Data Processing Equipment Repairer*

49-2021 Radio, Cellular, and Tower Equipment Installers and Repairers

Repair, install or maintain mobile or stationary radio transmitting, broadcasting, and receiving equipment, and two-way radio communications systems used in cellular telecommunications, mobile broadband, ship-to-shore, aircraft-to-ground communications, and radio equipment in service and emergency vehicles. May test and analyze network coverage.

Illustrative examples: Radio Frequency Technician, Radio Mechanic, Two-Way Radio Technician

49-2022 Telecommunications Equipment Installers and Repairers, Except Line Installers

Install, set-up, rearrange, or remove switching, distribution, routing, and dialing equipment used in central offices or headends. Service or repair telephone, cable television, Internet, and other communications equipment on customers' property. May install communications equipment or communications wiring in buildings. Excludes "Telecommunications Line Installers and Repairers" (49-9052).

Illustrative examples: Fiber Optic Central Office Installer, Private Branch Exchange (PBX) Installer and Repairer

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, Aircraft Instrument Mechanic, Automatic Pilot Mechanic

49-2092 Electric Motor, Power Tool, and Related Repairers

Repair, maintain, or install electric motors, wiring, or switches.

Illustrative examples: Armature Rewinder, Electrical Parts Reconditioner

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. Excludes "Avionics Technicians" (49-2091) and "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096).

Illustrative examples: Locomotive Electrician, Marine Electronics Repairer

49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment

Repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas. Excludes "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: Industrial Robotics Mechanic, Missile Pad Mechanic, Public Address System 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: Power Transformer Repairer, Powerhouse Electrician, Relay Technician

49-2096 Electronic Equipment Installers and Repairers, Motor Vehicles

Install, diagnose, or repair communications, sound, security, or navigation equipment in motor vehicles.

Illustrative examples: Automotive Electrician, Car Alarm Installer, Car Stereo Installer, GPS Car Navigation Installer

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: Electronic Musical Instrument Repairer, Home Theater Installer, Satellite Dish Installer, Wireless Internet Installer

49-2098 Security and Fire Alarm Systems Installers

Install, program, maintain, or repair security or fire alarm wiring and equipment. Ensure that work is in accordance with relevant codes. Excludes "Electricians" (47-2111) who do a broad range of electrical wiring.

Illustrative examples: Burglar Alarm Installer, Fire Alarm Installer, Home Security Alarm Installer

49-3011 Aircraft Mechanics and Service Technicians

Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. Includes helicopter and aircraft engine specialists. Excludes "Avionics Technician" (49-2091).

Illustrative examples: Aircraft Engine Specialist, Airframe Mechanic, Flight Test Mechanic

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. Excludes "Avionics Technician" (49-2091).

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. Excludes "Avionics Technician" (49-2091).

49-3021 Automotive Body and Related Repairers

Repair and refinish automotive vehicle bodies and straighten vehicle frames. Excludes "Painters, Transportation Equipment" (51-9122) and "Automotive Glass Installers and Repairers" (49-3022).

Illustrative examples: Auto Body Customizer, Auto Bumper Straightener, Truck Body Repairer

49-3022 Automotive Glass Installers and Repairers

Replace or repair broken windshields and window glass in motor vehicles.

Illustrative examples: Auto Glass Mechanic, Automotive Glazier, Windshield Installer

49-3023 Automotive Service Technicians and Mechanics

Diagnose, adjust, repair, or overhaul automotive vehicles. Excludes "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 Transmission Specialist, Automotive Brake Technician, Automotive Fuel Injection Servicer, Hybrid Car Mechanic

49-3031 Bus and Truck Mechanics and Diesel Engine Specialists

Diagnose, adjust, repair, or overhaul buses and trucks, or maintain and repair any type of diesel engines. Includes mechanics working primarily with automobile or marine diesel engines.

Illustrative examples: Biodiesel Engine Specialist, Marine Diesel Technician, School Bus Mechanic, Tractor Trailer Mechanic

49-3041 Farm Equipment Mechanics and Service Technicians

Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems. Excludes "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).

Illustrative examples: Combine Mechanic, Dairy Equipment Repairer, Irrigation Equipment Mechanic

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. Excludes "Rail Car Repairers" (49-3043) and "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).

Illustrative examples: Bulldozer Mechanic, Construction Equipment Mechanic, Forklift Mechanic

49-3043 Rail Car Repairers

Diagnose, adjust, repair, or overhaul railroad rolling stock, mine cars, or mass transit rail cars. Excludes "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).

Illustrative examples: Mine Car Mechanic, Street Car Repairer, Subway Car Repairer, Trolley Car Overhauler

49-3051 Motorboat Mechanics and Service Technicians

Repair and adjust electrical and mechanical equipment of inboard or inboard-outboard boat engines. Excludes "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).

Illustrative examples: Certified Marine Mechanic, Outboard Motor Mechanic

49-3052 Motorcycle Mechanics

Diagnose, adjust, repair, or overhaul motorcycles, scooters, mopeds, dirt bikes, or similar motorized vehicles.

Illustrative examples: All Terrain Vehicle Technician, Motorcycle Service Technician, Motor Scooter Mechanic

49-3053 Outdoor Power Equipment and Other Small Engine Mechanics

Diagnose, adjust, repair, or overhaul small engines used to power lawn mowers, chain saws, recreational sporting equipment and related equipment.

Illustrative examples: Golf Cart Mechanic, Lawn Mower Repairer, Mobility Scooter Repairer, Power Saw Mechanic

49-3091 Bicycle Repairers

Repair and service bicycles.

Illustrative examples: Bicycle Mechanic, Bicycle Service Technician

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. Includes workers who perform customized van conversions. Excludes "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 examples: Recreational Vehicle (RV) Repairer, RV Mechanic

49-3093 Tire Repairers and Changers

Repair and replace tires.

Illustrative examples: Tire Balancer, Tire Fixer

49-9011 Mechanical Door Repairers

Install, service, or repair automatic door mechanisms and hydraulic doors. Includes garage door mechanics.

Illustrative example: Automatic Door Mechanic

49-9012 Control and Valve Installers and Repairers, Except Mechanical Door

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: Air Valve Mechanic, Gas Meter Installer, 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: Gas Furnace Installer; Heating, Ventilation, and Air Conditioning (HVAC) Mechanic; 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: Vacuum Cleaner Repairer, Washing Machine Installer, Window Air Conditioner Installer

49-9041 Industrial Machinery Mechanics

Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems. Excludes "Millwrights" (49-9044), "Mobile Heavy Equipment Mechanics, Except Engines" (49-3042), and "Maintenance Workers, Machinery" (49-9043). *Illustrative examples: Boilerhouse Mechanic, Foundry Equipment Mechanic, Hydroelectric Machinery Mechanic*

49-9043 Maintenance Workers, Machinery

Lubricate machinery, change parts, or perform other routine machinery maintenance. Excludes "Maintenance and Repair Workers, General" (49-9071).
Illustrative example: Crane Oiler

49-9044 Millwrights

Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.
Illustrative examples: Machine Erector, Machinery Dismantler, Maintenance Millwright

49-9045 Refractory Materials Repairers, Except Brickmasons

Build or repair equipment such as furnaces, kilns, cupolas, boilers, converters, ladles, soaking pits and ovens, using refractory materials.
Illustrative examples: Bondactor Machine Repairer, Cupola Repairer, Kiln Door Builder, Ladle 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. Excludes "Electrical and Electronics Repairers, Powerhouse, Substation, and Relay" (49-2095).
Illustrative examples: Electric Powerline Examiner, Electric Utility Lineworker, Electrical High Tension Tester, Electrical Lineworker

49-9052 Telecommunications Line Installers and Repairers

Install and repair telecommunications cable, including fiber optics.
Illustrative examples: Cable Television Installer, FIOS Line Installer, Telephone Cable Splicer

49-9061 Camera and Photographic Equipment Repairers

Repair and adjust cameras and photographic equipment, including commercial video and motion picture camera equipment.
Illustrative example: Aircraft Photographic Equipment Repairer, Camera Repairer, Photographic Equipment Technician

49-9062 Medical Equipment Repairers

Test, adjust, or repair biomedical or electromedical equipment.
Illustrative examples: Biomedical Equipment Technician, Radiology Equipment Servicer, 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. Excludes "Electronic Home Entertainment Equipment Installers and Repairers" (49-2097) who repair electrical and electronic musical instruments.
Illustrative examples: Brass and Wind Instrument Repairer, Piano Tuner, Violin Repairer

49-9064 Watch Repairers

Repair, clean, and adjust mechanisms of timing instruments, such as watches and clocks. Includes watchmakers, watch technicians, and mechanical timepiece repairers. *Illustrative examples: Antique Clock Repairer, Clock Repair Technician, Horologist*

49-9069 Precision Instrument and Equipment Repairers, All Other

All precision instrument and equipment repairers not listed separately. *Illustrative examples: Gyroscope Repairer, Telescope Repairer*

49-9071 Maintenance and Repair Workers, General

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. Excludes "Maintenance Workers, Machinery" (49-9043). *Illustrative example: Building Maintenance Mechanic*

49-9081 Wind Turbine Service Technicians

Inspect, diagnose, adjust, or repair wind turbines. Perform maintenance on wind turbine equipment including resolving electrical, mechanical, and hydraulic malfunctions. *Illustrative examples: Wind Energy Technician, Wind Turbine Mechanic*

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: Arcade Games Mechanic, Parking Meter Collector, Slot Machine Mechanic, Vending Machine Filler*

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. Excludes "Fishers and Related Fishing Workers" (45-3011), "Athletes and Sports Competitors" (27-2021), and "Police and Sheriff's Patrol Officers" (33-305). *Illustrative examples: Marine Diver, Salvage Diver, Scuba Diver, Underwater Welder*

49-9093 Fabric Menders, Except Garment

Repair tears, holes, and other defects in fabrics, such as draperies, linens, parachutes, and tents. *Illustrative examples: Fabric Awning Repairer, Parachute Repairer, Sail Repairer*

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, Safe and Vault Installer, Safe and Vault Mechanic*

49-9095 Manufactured Building and Mobile Home Installers

Move or install mobile homes or prefabricated buildings. *Illustrative examples: Housetrailer Servicer, Mobile Home Mechanic, Mobile Home 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, Crane Rigger, 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: Light Rail Signal Technician, Rail Signal Mechanic, 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: Automobile Body Repairer Helper, Locksmith Helper, Motorboat Mechanic Helper

49-9099 Installation, Maintenance, and Repair Workers, All Other

All installation, maintenance, and repair workers not listed separately.

Illustrative examples: Bowling Alley Mechanic, Fire Extinguisher Installer, Gasoline Pump Installer, Gunsmith

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51-000 – PRODUCTION OCCUPATIONS

51-1011 First-Line Supervisors of Production and Operating Workers

Directly 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. Excludes team or work leaders.

Illustrative examples: Assembly Line Supervisor, Machinist Supervisor, Printing Worker Supervisor

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 De-Icer Installer, Aircraft Fuselage Framer, Aircraft Riveter

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, Circuit Board Assembler, Electric Motor Controls Assembler

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: Programmable Logic Controller Assembler, Synchronous Motor Assembler, Vacuum Cleaner Assembler, Vending Machine Assembler

51-2031 Engine and Other Machine Assemblers

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: Gas Turbine Assembler, Machine Builder, Steam Turbine Assembler

51-2041 Structural Metal Fabricators and Fitters

Fabricate, position, align, and fit parts of structural metal products. Shipfitters are included in "Layout Workers, Metal and Plastic" (51-4192).

Illustrative examples: Mill Beam Fitter, 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 Boat Builder, Fiberglass Ski 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. Includes team leaders who work as part of the team. Assemblers who continuously perform the same task are classified elsewhere in 51-2000.

Illustrative examples: Team Assembly Line Machine Operator, Lead Team Assembler, Team Automobile Assembler

51-2093 Timing Device Assemblers and Adjusters

Perform precision assembling, adjusting, or calibrating, within narrow tolerances, of timing devices such as digital clocks or timing devices with electrical or electronic components. Excludes watchmakers, which are included in "Watch Repairers" (49-9064).

Illustrative examples: Digital Watch Assembler, Electrical Timing Device Calibrator, Marine Chronometer Assembler

51-2099 Assemblers and Fabricators, All Other

All assemblers and fabricators not listed separately.

Illustrative examples: Air Bag Builder, Crate Builder, Doll Maker

51-3011 Bakers

Mix and bake ingredients to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods. Pastry chefs in restaurants and hotels are included with "Chefs and Head Cooks" (35-1011).

Illustrative examples: Bagel Maker, Bread 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: Butcher Apprentice, Kosher Butcher, Meat Carver, Meat Counter Worker*

51-3022 Meat, Poultry, and Fish Cutters and Trimmers

Use hand or hand tools to perform routine cutting and trimming of meat, poultry, and seafood.

Illustrative examples: Fish Filleter, Oyster Shucker, Poultry Eviscerator, Shrimp Picker

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. Excludes "Meat, Poultry, and Fish Cutters and Trimmers" (51-3022) who perform routine meat cutting.

Illustrative examples: Halal Meat Packer, Poultry Slaughter, Shochet

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, Fish Smoker, Meat Curer, Smokehouse Worker

51-3092 Food Batchmakers

Set up and operate equipment that mixes or blends ingredients used in the manufacturing of food products. Includes candy makers and cheese makers.

Illustrative examples: Frozen Yogurt 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. Excludes "Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders" (51-3091).

Illustrative examples: Doughnut Machine Operator, Dumpling Machine Operator, Potato Chip Frier

51-3099 Food Processing Workers, All Other

All food processing workers not listed separately.

Illustrative examples: Olive Pitter, Poultry Hanger, Yeast Maker

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: Computer Numerically Controlled (CNC) Shot Peening Operator, Jig Boring Machine Operator for Metal, Welding Robot Operator

51-4012 Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic

Develop programs to control machining or processing of metal or plastic parts by automatic machine tools, equipment, or systems.

Illustrative examples: Metal Numerical Control Programmer, Metal Numerical Tool Programmer, Sheet Metal Computer Numerically Controlled (CNC) 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 example: Wire Drawing Machine Tender

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, Forging Roll Operator, Spike Machine Operator, Swager 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: Brass Roller, Forming Roll Operator, Plastic Straightening Roll Operator, Steel Roller

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: Crimping Machine Operator for Metal, Metal Punch Press Operator, Metal Slitter

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: Boring Mill Operator for Metal, Drill Press Operator for Metal, Radial Drill Press Operator for Plastic

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: Aluminum Polisher, Jewel Bearing Facer, Metal Grinder, Tool Polishing Machine Operator

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: Engine Lathe Operator, Gear Cutter, Screw Machine Operator

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: Metal Milling Machine Operator, Plastic Thread Milling Machine Setup Operator

51-4041 Machinists

Set up and operate a variety of machine tools to produce precision parts and instruments. Includes 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, mathematics, metal properties, layout, and machining procedures.

Illustrative examples: Automotive Machinist, Gear Machinist, Production Machinist

51-4051 Metal-Refining Furnace Operators and Tenders

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. Excludes "Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic" (51-4191).

Illustrative examples: Electric Arc Furnace Operator, Smelter Operator

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 Caster, Molten Iron Pourer, 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. Includes template makers.

Illustrative examples: Metal Mockup Maker, Plastic Jig and Fixture Builder

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.

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: Airset Caster, Green Sand Molder, Wax Pattern Coater

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: Aluminum Molding Machine Operator, Blow Mold Operator, Plastic Cup Fabricating Machine Operator

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: Combination Machine Tool Operator, Multi-operation Forming Machine Setter

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: Jig Bore Tool Maker, Metal Die Finisher, Metal Gauge Maker

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: Arc Welder, Cutting Torch Operator, Pipe Welder, Silver Solderer

51-4122 Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Includes workers who operate laser cutters or laser-beam machines.

Illustrative examples: Electric Beam Welder Setter, 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: Annealing Furnace Operator, Induction Machine Setter, Wire Temperer

51-4192 Layout 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. Includes shipfitters.

Illustrative example: Shipfitter Apprentice

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. Includes electrolytic processes.

Illustrative examples: Anodizer, Galvanizer, Nickel Plater

51-4194 Tool Grinders, Filers, and Sharpeners

Perform precision smoothing, sharpening, polishing, or grinding of metal objects.

Illustrative example: Tool Grinding Machine Operator

51-4199 Metal Workers and Plastic Workers, All Other

All metal workers and plastic workers not listed separately.

Illustrative examples: Electrical Discharge Machine Setup Operator, Metal Rivet Machine Operator, Tin Recovery Worker

51-5111 Prepress Technicians and Workers

Format and proof text and images submitted by designers and clients into finished pages that can be printed. Includes digital and photo typesetting. May produce printing plates.

Illustrative examples: Digital Proofing and Platemaker, Photoengraver, Plate Moulder

51-5112 Printing Press Operators

Set up and operate digital, letterpress, lithographic, flexographic, gravure, or other printing machines. Includes short-run offset printing presses.

Illustrative examples: Gravure Press Operator, Offset Press Operator, Web Press Operator

51-5113 Print Binding and Finishing Workers

Bind books and other publications or finish printed products by hand or machine. May set up binding and finishing machines.

Illustrative examples: Bookbinder, Bookbinding Machine Operator

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, linens, rugs, and carpets. Includes spotters and dyers of these articles.

Illustrative examples: Laundry Attendant, Laundry Equipment Operator, Laundry Sorter

51-6021 Pressers, Textile, Garment, and Related Materials

Press or shape articles by hand or machine.

Illustrative examples: Clothes Ironer, Pants Presser, Wool Presser

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, Button Sewing Machine Operator, Custom T-Shirt Embroidery Machine Operator

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: Cobbler, Saddle Maker, Shoemaker

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: Arch Cushion Press Operator, Lasting Machine Operator, Rasper Machine Operator

51-6051 Sewers, Hand

Sew, join, reinforce, or finish, usually with needle and thread, a variety of manufactured items. Includes weavers and stitchers. Excludes "Fabric Menders, Except Garment" (49-9093). *Illustrative examples: Hand Quilter, Hand Stitcher*

51-6052 Tailors, Dressmakers, and Custom Sewers

Design, make, alter, repair, or fit garments.

Illustrative examples: Alterations Tailor, Coat Maker, Vest Maker

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: Cloth Dyer, 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, Industrial Fabric Cutter, Welt Trimming Machine Operator

51-6063 Textile Knitting and Weaving Machine Setters, Operators, and Tenders

Set up, operate, or tend machines that knit, loop, weave, or draw in textiles. Excludes "Sewing Machine Operators" (51-6031). *Illustrative examples: Crochet Machine Operator, Jacquard Loom Weaver, Looping Machine Operator*

51-6064 Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders

Set up, operate, or tend machines that wind or twist textiles; or draw out and combine sliver, such as wool, hemp, or synthetic fibers. Includes slubber machine and drawing frame operators.

Illustrative examples: Rope Machine Setter, Silk Winding Machine Operator

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, Synthetic Filament Extruder

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: Clothing Patternmaker, Embroidery Patternmaker, Fabric Pattern Grader

51-6093 Upholsterers

Make, repair, or replace upholstery for household furniture or transportation vehicles.

Illustrative examples: Aircraft Seat Upholsterer, Furniture Upholsterer

51-6099 Textile, Apparel, and Furnishings Workers, All Other

All textile, apparel, and furnishings workers not listed separately.

Illustrative examples: Apparel Embroidery Digitizer, Feltmaker, Hat Blocking Machine Operator

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. Excludes "Woodworking Machine Setters, Operators, and Tenders" (51-7040).

Illustrative examples: Cabinet Builder, Marquetry Worker, Wood Furniture Assembler

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 Sander, Piano Refinisher, Wood Cabinet Finisher

51-7031 Model Makers, Wood

Construct full-size and scale wooden precision models of products. Includes wood jig builders and loft workers.

Illustrative example: Architectural Wood Model Maker

51-7032 Patternmakers, Wood

Plan, lay out, and construct wooden unit or sectional patterns used in forming sand molds for castings.

Illustrative example: Wood Die Maker

51-7041 Sawing Machine Setters, Operators, and Tenders, Wood

Set up, operate, or tend wood sawing machines. May operate CNC equipment. Includes lead sawyers.

Illustrative examples: Buzzsaw Operator, Circle Saw Operator, Rip Saw Operator, Trim Saw Operator

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. May operate CNC equipment.

Illustrative examples: Wood Dowel Machine Operator, Wood Lathe Operator, Wood Planer

51-7099 Woodworkers, All Other

All woodworkers not listed separately.

Illustrative examples: Pole Framer, Wood Carver, Wood Casket Assembler

51-8011 Nuclear Power Reactor Operators

Operate or control nuclear reactors. Move control rods, start and stop equipment, monitor and adjust controls, and record data in logs. Implement emergency procedures when needed. May respond to abnormalities, determine cause, and recommend corrective action.

Illustrative examples: Nuclear Control Room Operator, Nuclear Reactor Operator, Nuclear Station Operator

51-8012 Power Distributors and Dispatchers

Coordinate, regulate, or distribute electricity or steam.

Illustrative examples: Steam Plant Control Room Operator, Substation Operator

51-8013 Power Plant Operators

Control, operate, or maintain machinery to generate electric power. Includes auxiliary equipment operators. Excludes "Nuclear Power Reactor Operators" (51-8011).

Illustrative examples: Hydroelectric Plant Operator, Powerhouse 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: Boiler Engineer; Boiler Room Operator; Heating, Ventilation, and Air Conditioning (HVAC) Mechanic Boiler Operator

51-8031 Water and Wastewater 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 wastewater.

Illustrative examples: Liquid Waste Treatment Plant Operator, Sewage Plant Operator

51-8091 Chemical Plant and System Operators

Control or operate entire chemical processes or system of machines.

Illustrative examples: Nitric Acid Plant Operator, Pharmaceutical Manufacturing Machine Operator

51-8092 Gas Plant Operators

Distribute or process gas for utility companies and others by controlling compressors to maintain specified pressures on main pipelines.

Illustrative examples: Gas Controller, Gas Plant Dispatcher

51-8093 Petroleum Pump System Operators, Refinery Operators, and Gaugers

Operate or control 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: Hydrotreater Operator, Oil Pipeline Operator, Oil Refiner

51-8099 Plant and System Operators, All Other

All plant and system operators not listed separately.

Illustrative examples: Asphalt Plant Operator, Concrete Batch Plant Operator, Lime Filter Operator

51-9011 Chemical Equipment Operators and Tenders

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. Excludes "Chemical Plant and System Operators" (51-8091).

Illustrative examples: Acid Purification Equipment Operator, Chemical Process Equipment Operator

51-9012 Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders

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. Includes dairy processing equipment operators. Excludes "Chemical Equipment Operators and Tenders" (51-9011).

Illustrative examples: Brewmaster, Fermentation Operator, Pasteurizer

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, Industrial Coffee Grinder, Marble and Granite Polisher, Pulverizer Operator

51-9022 Grinding and Polishing Workers, Hand

Grind, sand, or polish, using hand tools or hand-held power tools, a variety of metal, wood, stone, clay, plastic, or glass objects. Includes chippers, buffers, and finishers.

Illustrative examples: Hand Buffer, Hand Sander, Jewelry Polisher, Knife Grinder

51-9023 Mixing and Blending Machine Setters, Operators, and Tenders

Set up, operate, or tend machines to mix or blend materials, such as chemicals, tobacco, liquids, color pigments, or explosive ingredients. Excludes "Food Batchmakers" (51-3092).

Illustrative examples: Asphalt Blender, Clay Mixer, Ink Blender

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: Fur Trimmer, Hand Cloth Cutter

51-9032 Cutting and Slicing Machine Setters, Operators, and Tenders

Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material. Excludes "Woodworking Machine Setters, Operators, and Tenders" (51-7040), "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: Glass Cutting Machine Operator, Insulation Cutter, Rubber Trimmer

51-9041 Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders

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. Excludes "Paper Goods Machine Setters, Operators, and Tenders" (51-9196) and "Shoe Machine Operators and Tenders" (51-6042).

Illustrative examples: Brick Maker, Rubber Extrusion Operator, Sugar Presser

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: Lime Kiln Operator, Lumber Kiln Operator, Rubber Curer

51-9061 Inspectors, Testers, Sorters, Samplers, and Weighers

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: Machined Parts Quality Inspector*

51-9071 Jewelers and Precious Stone and Metal Workers

Design, fabricate, adjust, repair, or appraise jewelry, gold, silver, other precious metals, or gems. Includes 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 Setter, Gemologist, Goldsmith

51-9081 Dental Laboratory Technicians

Construct and repair full or partial dentures or dental appliances. Excludes "Dental Assistants" (31-9091). *Illustrative examples: Crown and Bridge Technician, Dental Ceramist, Orthodontic Technician*

51-9082 Medical Appliance Technicians

Construct, fit, maintain, or repair medical supportive devices, such as braces, orthotics and prosthetic devices, joints, arch supports, and other surgical and medical appliances. *Illustrative examples: Brace Maker, Orthotics Technician, Prosthetics Technician*

51-9083 Ophthalmic Laboratory Technicians

Cut, grind, and polish eyeglasses, contact lenses, or other precision optical elements. Assemble and mount lenses into frames or process other optical elements. Includes precision lens polishers or grinders, centerer-edgers, and lens mounters. Excludes "Opticians, Dispensing" (29-2081).

Illustrative examples: Eyeglass Maker, Lens Grinder, Precision Lens Centerer and Edger

51-9111 Packaging and Filling Machine Operators and Tenders

Operate or tend machines to prepare industrial or consumer products for storage or shipment. Includes cannery workers who pack food products.

Illustrative examples: Bottle Capper, Keg Filler, Potato Chip Packaging 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 glassware, cloth, ceramics, metal, plastic, paper, or wood, with lacquer, silver, copper, rubber, varnish, glaze, enamel, oil, or rust-proofing materials. Excludes "Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic" (51-4193) and "Painters, Transportation Equipment" (51-9122).

Illustrative examples: Electrostatic Paint Operator, Lacquer Spray Booth 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. Includes painters in auto body repair facilities.

Illustrative examples: Aircraft Painter, Auto Painter, Railroad Car Painter

51-9123 Painting, Coating, and Decorating Workers

Paint, coat, or decorate articles such as furniture, glass, plateware, pottery, jewelry, toys, books, or leather. Excludes "Artists and Related Workers" (27-1010), "Designers" (27-1020), "Photographic Process Workers and Processing Machine Operators" (51-9151), and "Etchers and Engravers" (51-9194).

Illustrative examples: Ceramic Painter, China Decorator, Sign Painter

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; and 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: Electronic Semiconductor Processor, Semiconductor Assembler, Wafer Fabricator

51-9151 Photographic Process Workers and Processing Machine Operators

Perform work involved in developing and processing photographic images from film or digital media. May perform precision tasks such as editing photographic negatives and prints.

Illustrative examples: Digital Photo Printer, Photo Lab Specialist, Photo Retoucher

51-9191 Adhesive Bonding Machine Operators and Tenders

Operate or tend bonding machines that use adhesives to join items for further processing or to form a completed product. Processes include joining veneer sheets into plywood; gluing paper; or joining rubber and rubberized fabric parts, plastic, simulated leather, or other materials. Excludes "Shoe Machine Operators and Tenders" (51-6042).

Illustrative examples: Glue Line Operator, Glue Reel Operator, Paper Gluing Operator

51-9192 Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders

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, Immersion Metal Cleaner

51-9193 Cooling and Freezing Equipment Operators and Tenders

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: Chiller Tender, Refrigerating Machine Operator

51-9194 Etchers and Engravers

Engrave or etch metal, wood, rubber, or other materials. Includes such workers as etcher-circuit processors, pantograph engravers, and silk screen etchers.

Photoengravers are included in "Prepress Technicians and Workers" (51-5111).

Illustrative examples: Glass Etcher, Metal Engraver

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, Neon Tube Bender

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: Box Fabricator, Carton Making Machine Operator, Corrugator Operator

51-9197 Tire Builders

Operate machines to build tires.

Illustrative examples: Auto Tire Recapper, Tire Builder, Tire Molder

51-9198 Helpers—Production Workers

Help production workers by performing duties requiring less skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment.

Apprentice workers are classified in the appropriate production occupations (51-0000).

Illustrative examples: Blending Tank Helper, Commercial Baker Helper, Welder Helper

51-9199 Production Workers, All Other

All production workers not listed separately.

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53-0000 – TRANSPORTATION & MATERIAL MOVING OCCUPATIONS

53-1011 Aircraft Cargo Handling Supervisors

Supervise and coordinate the activities of ground crew in the loading, unloading, securing, and staging of aircraft cargo or baggage. May 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. Includes loadmasters.

Illustrative examples: Air Cargo Ground Crew Supervisor, Air Cargo Ground Operations Supervisor, Airport Ramp Supervisor

53-1021 First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand

Directly supervise and coordinate the activities of helpers, laborers, or material movers.

Illustrative examples: Material Handling Crew Supervisor, Warehouse Supervisor

53-1031 First-Line Supervisors 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: Dock Operations Supervisor, Gas Station Supervisor, Refuse Collector Supervisor

53-2011 Airline Pilots, Copilots, and Flight Engineers

Pilot and navigate the flight of fixed-wing, multi-engine aircraft, usually on scheduled air carrier routes, for the transport of passengers and cargo. Requires Federal Air Transport Pilot certificate and rating for specific aircraft type used. Includes regional, National, and international airline pilots and flight instructors of airline pilots.

Illustrative examples: Airline Captain, Airline Pilot in Command, Charter Pilot (Air Transport Pilot Certificate Required), Charter Pilot (Airline)

53-2012 Commercial Pilots

Pilot and navigate the flight of fixed-winged aircraft on nonscheduled air carrier routes, or helicopters. Requires Commercial Pilot certificate. Includes charter pilots with similar certification, and air ambulance and air tour pilots. Excludes regional, National, and international airline pilots.

Illustrative examples: Aerial Crop Duster, Charter Pilot (Commercial Pilot Certificate Required), Flight Instructor (Commercial Pilots), Helicopter 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: Air Traffic Control Operator, Control Tower Operator, Enroute Controller*

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: Aviation Operations Specialist, Flight Operations Coordinator

53-2031 Flight Attendants

Provide personal services to ensure the safety, security, and comfort of airline passengers during flight. Greet passengers, verify tickets, explain use of safety equipment, and serve food or beverages.

Illustrative examples: Airline Flight Attendant, Airplane Flight Attendant

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 examples: Emergency Medical Services (EMS) Driver

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 Bus Driver, Public Transit Bus Driver

53-3022 Bus Drivers, School or Special Client

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.

Illustrative examples: School Bus Operator, Special Education Bus Driver

53-3031 Driver/Sales Workers

Drive truck or other vehicle over established routes or within an established territory and sell or deliver goods, such as food products, including restaurant take-out items, or pick up or deliver items such as commercial laundry. May also take orders, collect payment, or stock merchandise at point of delivery. Includes newspaper delivery drivers. Excludes "Coin, Vending, and Amusement Machine Servicers and Repairers" (49-9091) and "Light Truck or Delivery Services Drivers" (53-3033).

Illustrative examples: Bakery Deliverer, Pizza Delivery Driver, Route Salesperson

53-3032 Heavy and Tractor-Trailer Truck Drivers

Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May be required to unload truck. Requires commercial drivers' license.

Illustrative examples: Auto Carrier Driver, Cement Truck Driver, Moving Van Driver

53-3033 Light Truck or Delivery Services Drivers

Drive a light vehicle, such as a truck or van, with a capacity of less than 26,000 pounds Gross Vehicle Weight (GVW), primarily to deliver or pick up merchandise or to deliver packages. May load and unload vehicle. Excludes "Couriers and Messengers" (43-5021) and "Driver/Sales Workers" (53-3031).

Illustrative example: Pharmacy Delivery Driver

53-3041 Taxi Drivers and Chauffeurs

Drive automobiles, vans, or limousines to transport passengers. May occasionally carry cargo. Includes hearse drivers. Excludes "Ambulance Drivers and Attendants, Except Emergency Medical Technicians" (53-3011) and "Bus Drivers" (53-3020).

Illustrative examples: Cab Driver, Courtesy Van Driver, Limousine Driver

53-3099 Motor Vehicle Operators, All Other

All motor vehicle operators not listed separately.

Illustrative examples: Ice-Resurfacing Machine Operator, Motorcycle Deliverer, Street Cleaning Equipment Operator

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: Railroad Engineer, Train Engineer*

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: Diesel Locomotive Firer, Dinkey Engine Firer, 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: Coal Tram Driver, Railcar Switcher

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: Railway Switch Operator, Switch Coupler

53-4031 Railroad Conductors and Yardmasters

Coordinate activities of switch-engine crew within railroad yard, industrial plant, or similar location. Conductors coordinate activities of train crew on passenger or freight trains. Yardmasters review train schedules and switching orders and coordinate activities of workers engaged in railroad traffic operations, such as the makeup or breakup of trains and yard switching.

Illustrative examples: Freight Conductor, Yard Conductor

53-4041 Subway and Streetcar Operators

Operate subway or elevated suburban trains with no separate locomotive, or electric-powered streetcar, to transport passengers. May handle fares.

Illustrative examples: Light Rail Transit Operator, Tram Operator, Trolley Car Operator

53-4099 Rail Transportation Workers, All Other

All rail transportation workers not listed separately.

Illustrative examples: Railway Equipment Operator, Retarder Operator, Transfer Table Operator

53-5011 Sailors and Marine Oilers

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. Includes able seamen and ordinary seamen.

Illustrative examples: Deckhand, Merchant Mariner

53-5021 Captains, Mates, and Pilots of Water Vessels

Command or supervise operations of ships and water vessels, such as tugboats and ferryboats. Required to hold license issued by U.S. Coast Guard. Excludes "Motorboat Operators" (53-5022).

Illustrative examples: Barge Captain, First Mate, Harbor Pilot, Port Captain

53-5022 Motorboat Operators

Operate small motor-driven boats. May assist in navigational activities.

Illustrative examples: Launch Operator, Speedboat Operator, Water Taxi Operator

53-5031 Ship Engineers

Supervise and coordinate activities of crew engaged in operating and maintaining engines, boilers, deck machinery, and electrical, sanitary, and refrigeration equipment aboard ship.

Illustrative examples: Barge Engineer, Ferry Engineer, Tugboat Engineer

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. Includes drawbridge operators, lock operators, and slip bridge operators.

Illustrative examples: Lighthouse Keeper, Lock and Dam Operator

53-6021 Parking Lot Attendants

Park vehicles or issue tickets for customers in a parking lot or garage. May collect fee.

Illustrative examples: Parking Ramp Attendant, Valet Parker

53-6031 Automotive and Watercraft Service 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: Gas and Oil Servicer, Gas Pump Attendant, Service Station 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 examples: Highway Traffic Control Technician, Traffic Signal Technician, Transportation Technician

53-6051 Transportation Inspectors

Inspect equipment or goods in connection with the safe transport of cargo or people. Includes rail transportation inspectors, such as freight inspectors; rail inspectors; and other inspectors of transportation vehicles, not elsewhere classified. Excludes "Transportation Security Screeners" (33-9093).

Illustrative examples: Aircraft Inspector, Motor Vehicle Emissions Inspector, Railroad Car Inspector

53-6061 Transportation Attendants, Except Flight Attendants

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. Excludes "Baggage Porters and Bellhops" (39-6011).

Illustrative examples: Ship Steward, Train Attendant

53-6099 Transportation Workers, All Other

All transportation workers not listed separately.

Illustrative examples: Airplane Refueler, Rickshaw Driver

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: Conveyor Belt Operator, Grain Elevator Operator

53-7021 Crane and Tower Operators

Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions. Excludes "Excavating and Loading Machine and Dragline Operators" (53-7032).

Illustrative examples: Boom Crane Operator, Cherry Picker Operator, Coal Tower Operator

53-7031 Dredge Operators

Operate dredge to remove sand, gravel, or other materials in order 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. Excludes "Dredge Operators" (53-7031).

Illustrative examples: Backhoe 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

Operate or tend hoists or winches to lift and pull loads using power-operated cable equipment. Excludes "Crane and Tower Operators" (53-7021).

Illustrative example: Winch Derrick Operator

53-7051 Industrial Truck and Tractor Operators

Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location. Excludes "Logging Equipment Operators" (45-4022).

Illustrative examples: Forklift Operator, Stacker Operator

53-7061 Cleaners of Vehicles and Equipment

Wash or otherwise clean vehicles, machinery, and other equipment. Use such materials as water, cleaning agents, brushes, cloths, and hoses. Excludes "Janitors and Cleaners, Except Maids and Housekeeping Cleaners" (37-2011).

Illustrative examples: Aircraft Cleaner, Auto Detailer, Car Wash Attendant

53-7062 Laborers and Freight, Stock, and Material Movers, Hand

Manually move freight, stock, or other materials or perform other general labor. Includes all manual laborers not elsewhere classified. Excludes "Material Moving Workers" (53-7011 through 53-7199) who use power equipment. Excludes "Construction Laborers" (47-2061) and "Helpers, Construction Trades" (47-3011 through 47-3019).

Illustrative examples: Cargo Handler, Wharf Laborer

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, Spinning Doffer

53-7064 Packers and Packagers, Hand

Pack or package by hand a wide variety of products and materials.

Illustrative examples: Egg Packer, Gift Wrapper, Grocery Store Bagger

53-7071 Gas Compressor and Gas Pumping Station Operators

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 examples: Butane Compressor Operator, Gas Cylinder Processor, Liquid Natural Gas Plant Operator

53-7072 Pump Operators, Except Wellhead Pumps

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, Fluid Pump Operator

53-7073 Wellhead Pumps

Operate power pumps and auxiliary equipment to produce flow of oil or gas from wells in oil field.

Illustrative example: Oil Well Pumper

53-7081 Refuse and Recyclable Material Collectors

Collect and dump refuse or recyclable materials from containers into truck. May drive truck.

Illustrative examples: Garbage Collector, Recyclable Materials Collector, Trash Collector

53-7111 Mine 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 example: Coal Hauler 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: Barge Loader, Rail Car Loader, Ship Unloader

53-7199 Material Moving Workers, All Other

All material moving workers not listed separately.

Illustrative example: Freight Elevator Operator