

CAREERS

CAREERS IN NORTH DAKOTA

2010 EDITION

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BEFORE YOU BEGIN BROWSING...

Job Service North Dakota's Labor Market Information Center has just released the 2010 edition of *Careers in North Dakota*. This comprehensive publication covers nearly everything you ever wanted to know about career opportunities in North Dakota including employment projections, wages, core tasks, work activities, skills, knowledge, and typical education/training requirements. Additionally, we've tagged those occupations that are high demand, high wage, and belong to one of five skill clusters. Also, there's the ability to cross-reference each occupation with a Standard Occupational Classification (SOC) code, career cluster, or general interest area. Review a sample layout of the publication on page 16. This publication should be used as a general guide for career exploration, not as the sole determinant of a career direction or choice.

HIGH DEMAND occupations are those with positive growth rates and total openings ranked within the top quartile for all occupations. This designation does not constitute an endorsement, but instead highlights a group of diverse occupations with projected positive growth rates and a large number of openings. Keep in mind, some relatively slow-growing, large occupations may not make the High Demand cutoff; conversely, some relatively fast-growing, small occupations may make the cutoff.

HIGH WAGE occupations are those with an average annual wage at least 25% greater than the average for all occupations.

The employment, wage, and projection data sources for this publication include the 2010 edition of the *Wages for North Dakota Jobs* publication and the 2008-2018 edition of the *North Dakota Employment Projections* publication, both compiled and published by Job Service North Dakota. Additionally, the distinguishing characteristics that define the key features of an occupation and describe the day-to-day aspects of the job and the qualifications and interests of the typical worker are supplied by the national Occupational Information Network (O*NET). Every occupation requires a different mix of knowledge and skills and is performed using a variety of activities and tasks. Updated data are incorporated into new versions of the database on an annual basis. While the O*NET data are not North Dakota-specific, they are generally comparable to the local job market. The latest O*NET database used in compiling this publication was released in June 2010 (Version 15).

INTERESTS

Interests are defined as preferences for work environments and outcomes. These national data are collected, disseminated, and published by the Occupational Information Network (O*NET). The top interest for each occupation is based on its highest occupational interest score. The six interest categories are defined below:

Realistic: Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

Investigative: Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

Artistic: Artistic occupations frequently involve working with forms, designs and patterns. They often require self-expression and the work can be done without following a clear set of rules.

Social: Social occupations frequently involve working with, communicating with, and teaching people. These occupations often involve helping or providing service to others.

Enterprising: Enterprising occupations frequently involve starting up and carrying out projects. These occupations can involve leading people and making many decisions. Sometimes they require risk-taking and often deal with business.

Conventional: Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

CAREER CLUSTERS

There are 16 official career cluster categories (for more information, visit www.careerclusters.org) but for occupational analysis purposes, the Labor Market Information Center has created 12 summary categories which are comprised of similar clusters and used throughout this publication. Like the official career cluster categories, our clusters contain occupations in the same field of work that require similar skills. Students, parents, and educators can use career clusters to help focus education plans towards obtaining the necessary knowledge, competencies, and training for success in a particular career pathway. Occupations are assigned to a career cluster using a crosswalk developed by the U.S. Department of Education. After internal labor market analysts conducted an extensive review of more than 800 occupations in the crosswalk, a total of 32 occupations were modified and moved to different clusters to better reflect North Dakota's labor market. Career clusters presented in this publication are summarized beginning below and continuing through page 10.

NATURAL RESOURCES & MINING

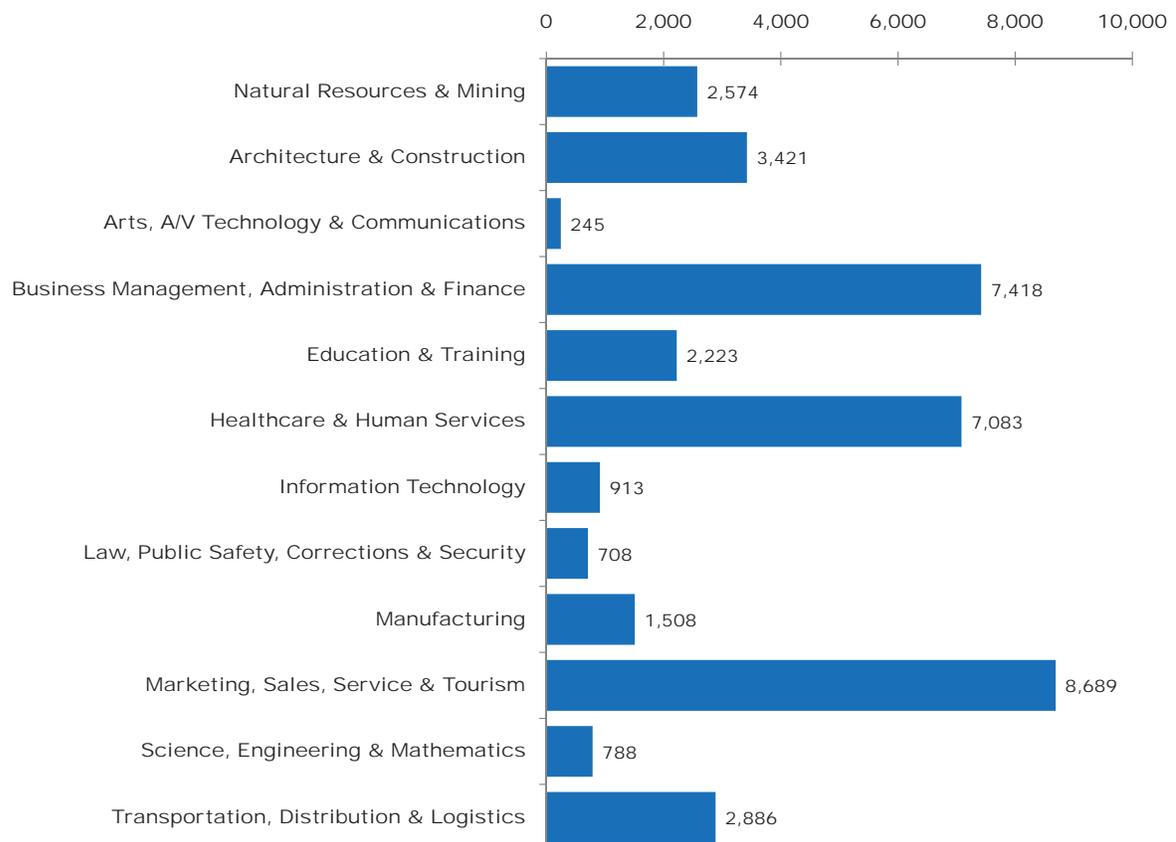
Agriculture, Food & Natural Resources: The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products and resources. Also includes energy production and processing activities related to oil, gas, and coal.

ARCHITECTURE & CONSTRUCTION

Architecture & Construction: Careers in designing, planning, managing, building, and maintaining the built environment.

CAREER CLUSTER OPENINGS BY NUMERIC GROWTH

2008-2018 PROJECTIONS



CAREER CLUSTERS

ARTS, AV TECHNOLOGY & COMMUNICATIONS

Arts, Audio/Video Technology & Communications: Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

BUSINESS MANAGEMENT, ADMINISTRATION & FINANCE

Business Management & Administration: Careers encompass planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.

Finance: Services for financial and investment planning, banking, insurance, and business financial management.

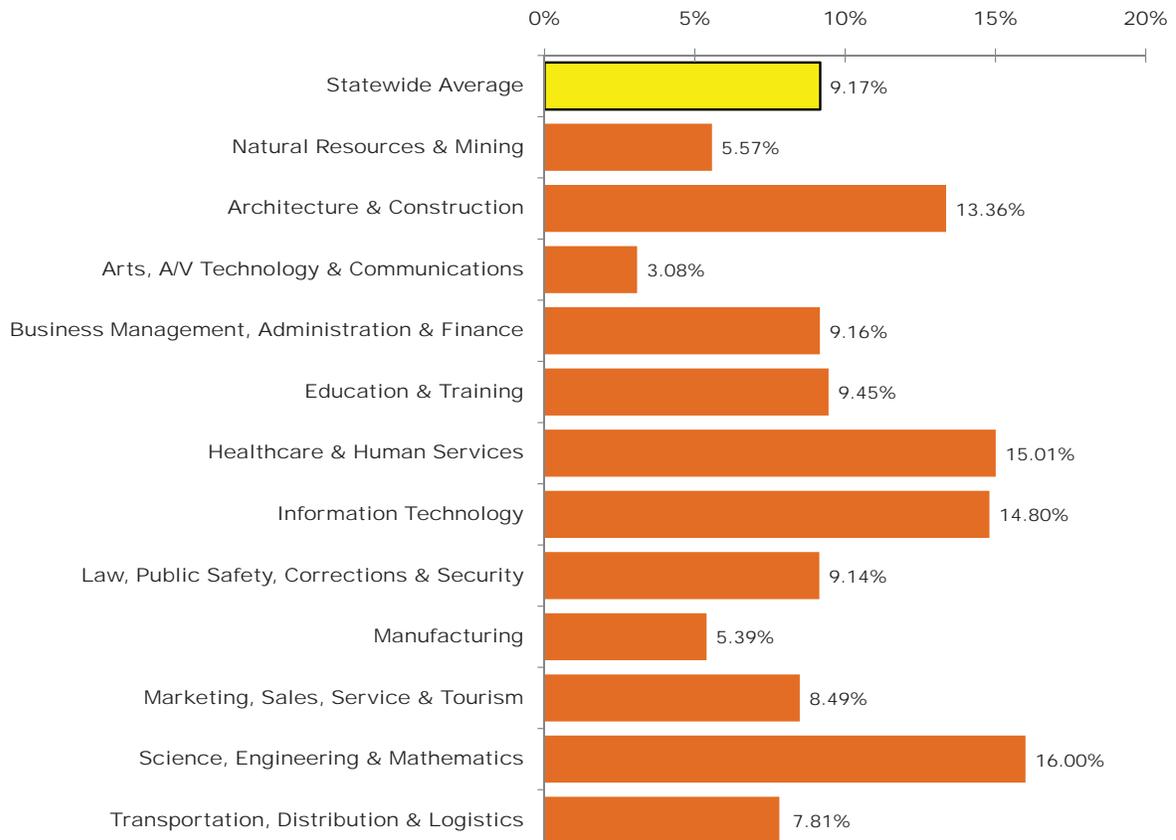
Government & Public Administration: Executing governmental functions to include governance, national security, foreign service, planning, revenue and taxation, regulation, and management and administration at the local, state, and federal levels.

EDUCATION & TRAINING

Education & Training: Planning, managing, and providing education and training services, and related learning support services.

CAREER CLUSTER OPENINGS BY PERCENT GROWTH

2008-2018 PROJECTIONS



CAREER CLUSTERS

HEALTHCARE & HUMAN SERVICES

Health Science: Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Human Services: Preparing individuals for employment in career pathways that relate to families and human needs.

INFORMATION TECHNOLOGY

Information Technology: Building linkages in IT occupations framework for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

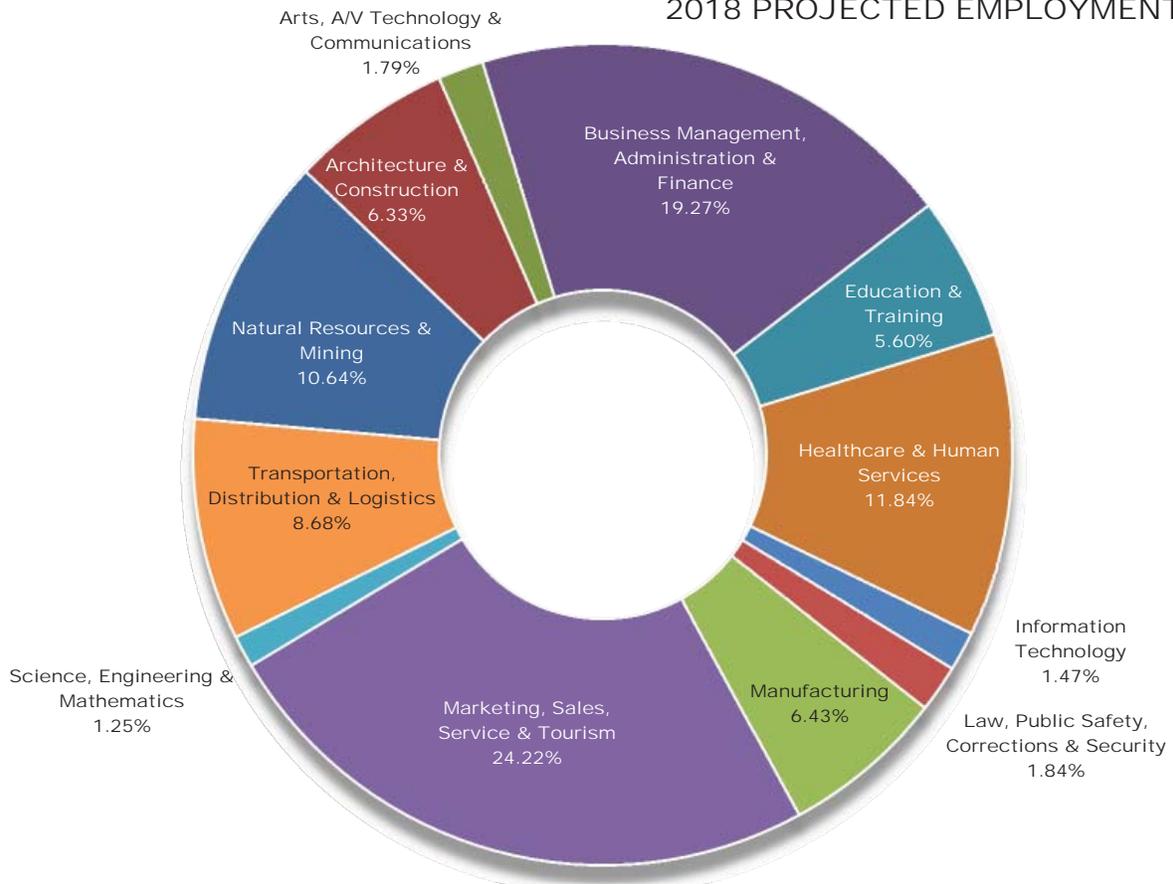
Law, Public Safety, Corrections & Security: Planning, managing, and providing legal, public safety, protective services, and homeland security, including professional and technical support services.

MANUFACTURING

Manufacturing: Planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing and process engineering.

CAREER CLUSTERS AS A SHARE OF TOTAL EMPLOYMENT

2018 PROJECTED EMPLOYMENT



May not add up to 100% due to rounding and/or the exclusion of occupations without an assigned career cluster which amounts to 0.57% of the total.

CAREER CLUSTERS

MARKETING, SALES, SERVICE & TOURISM

Marketing: Planning, managing, and performing marketing activities to reach organizational objectives.

Hospitality & Tourism: Management, marketing, and operations of restaurants and other food services, lodging, attractions, recreation events, and travel-related services.

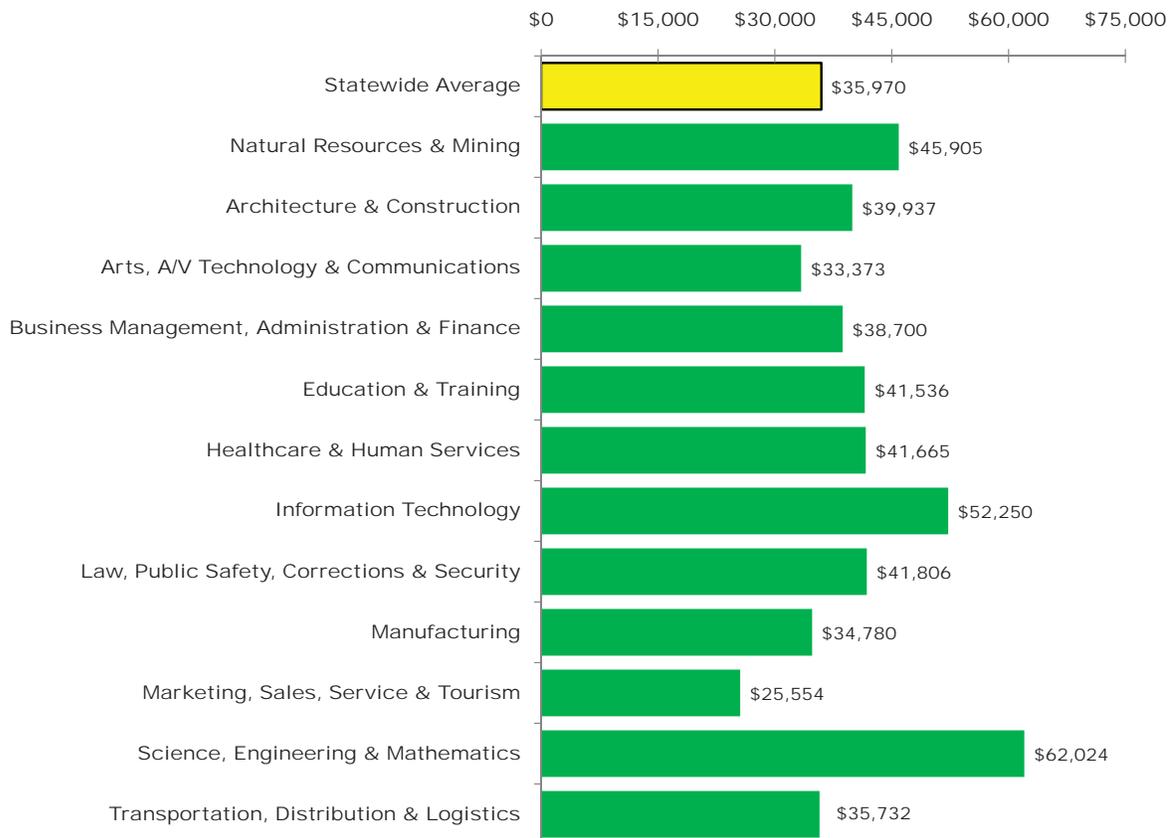
SCIENCE, ENGINEERING & MATHEMATICS

Science, Technology, Engineering & Mathematics: Planning, managing, and providing scientific research and professional and technical services (e.g. physical science, social science, engineering) including laboratory and testing services, and research and development services.

TRANSPORTATION, DISTRIBUTION & LOGISTICS

Transportation, Distribution & Logistics: Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

CAREER CLUSTER AVERAGE ANNUAL WAGES 2009



SKILL CLUSTERS

Occupations fall within one of five skill cluster categories outlined below. Each occupation's experience, education, and job training requirements, as outlined by O*NET job zones, are the primary determinants of a skill cluster assignment. Additionally, an internal review by labor market analysts resulted in the modification of skill cluster assignments for select occupations to better represent the local labor market. Therefore, this publication may not match the O*NET source material.

LOW SKILL

Low Skill occupations need little or no previous work-related skill, knowledge, or experience. Some of these occupations may require a high school diploma or GED certificate. Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job. Based on O*NET job zone category 1.

SOME SKILL

Some Skill occupations usually need some previous work-related skill, knowledge, or experience. These occupations usually require a high school diploma. Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations. Based on O*NET job zone category 2.

MEDIUM SKILL

Medium Skill occupations require previous work-related skill, knowledge, or experience. Most occupations in this cluster require training in vocational schools, related on-the-job experience, or an associate's degree. Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations. Based on O*NET job zone category 3.

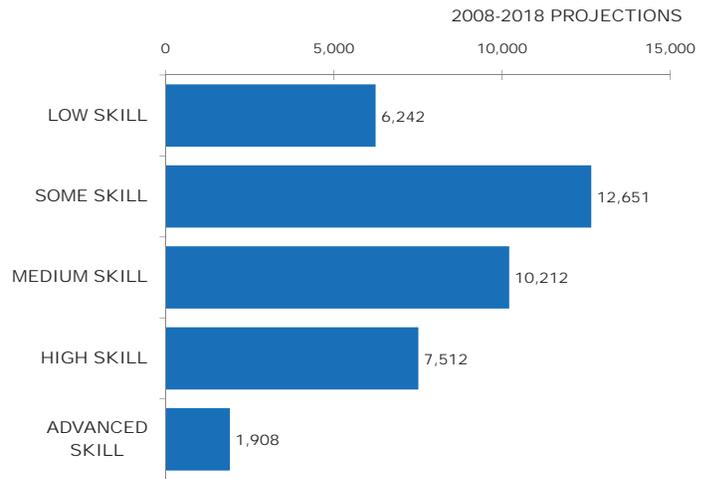
HIGH SKILL

High Skill occupations need a considerable amount of work-related skill, knowledge, or experience. Most of these occupations require a four-year bachelor's degree, but some do not. Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training. Based on O*NET job zone category 4.

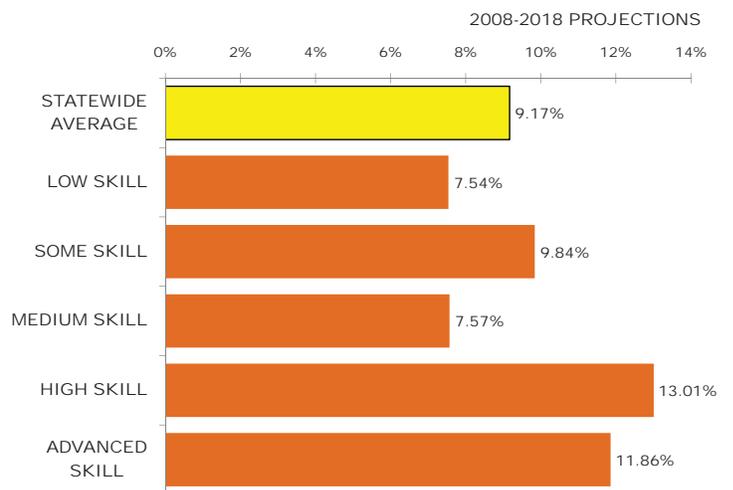
ADVANCED SKILL

Advanced Skill occupations need extensive skill, knowledge, and experience. Many require more than five years of experience. Most of these occupations require graduate school. Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training. Based on O*NET job zone category 5.

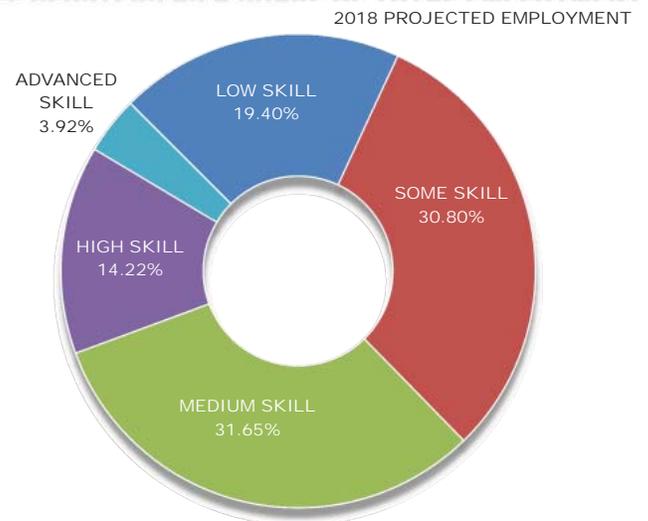
SKILL CLUSTER OPENINGS BY NUMERIC GROWTH



SKILL CLUSTER OPENINGS BY PERCENT GROWTH



SKILL CLUSTERS AS A SHARE OF TOTAL EMPLOYMENT



May not add up to 100% due to rounding.

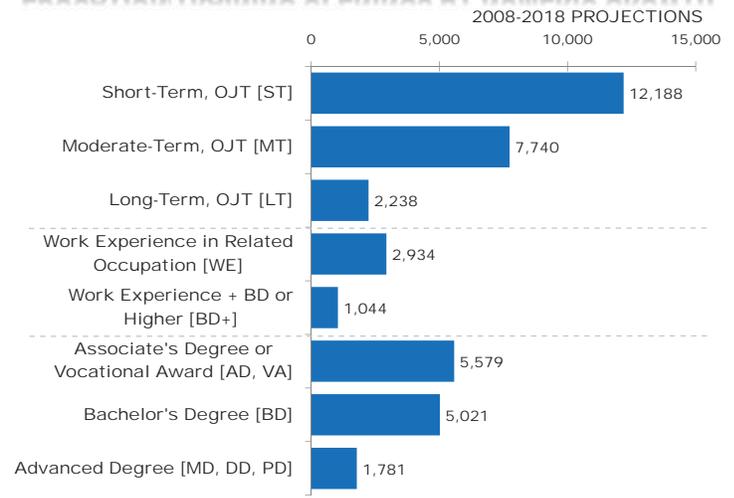
EDUCATION AND TRAINING CATEGORIES

The U.S. Bureau of Labor Statistics (BLS) created the education and training classification system which assigns occupations to one of eleven categories (see next page). A category is defined as the most significant source of education or training needed to become fully qualified in an occupation. BLS economists make each assignment based on quantitative and qualitative information. Sources of quantitative data include educational attainment data from the American Community Survey (ACS) and data on occupational skills, knowledge, work activities, and education and job training from the Occupational Information Network (O*NET). Qualitative information includes interviews with educators, employers, training experts, and experts in professional and trade associations. However, this classification system does not show the extent to which there are multiple paths of entry into an occupation. It also does not show that there may be multiple entry requirements (i.e. an occupation may require on-the-job training and some postsecondary education).

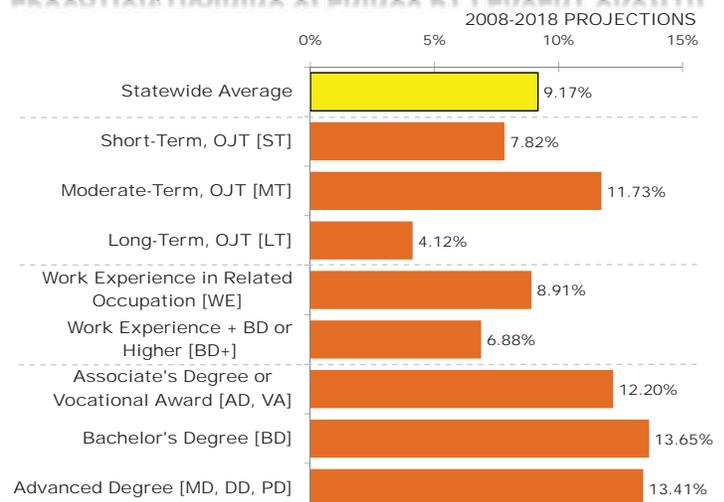
When an occupation has more than one path of entry, BLS identifies the path that research suggests is applicable to most current entrants. Postsecondary awards, if generally needed for entry into an occupation, take precedence over work-related training, even though additional skills or experience may be needed for a worker to become fully qualified. The length of time that an average worker generally needs to become fully qualified through a combination of on-the-job training and experience is used to categorize occupations in which a postsecondary award generally is not needed for entry.

Though the classification assignments are based on national research and may or may not reflect state-specific requirements for North Dakota, our review indicates a reasonable match for a vast majority of the occupations. The education and training categories cannot and do not describe all paths and are not intended to indicate the level of education and training required for a person to be hired. The education or training category for each occupation is reevaluated and updated biennially.

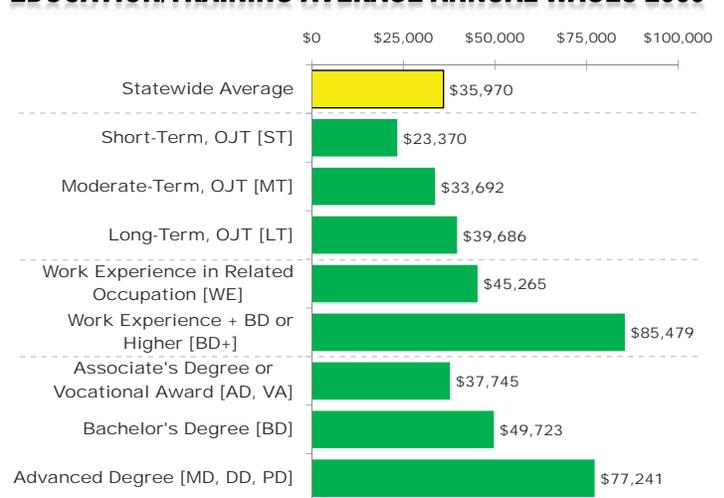
EDUCATION/TRAINING OPENINGS BY NUMERIC GROWTH



EDUCATION/TRAINING OPENINGS BY PERCENT GROWTH



EDUCATION/TRAINING AVERAGE ANNUAL WAGES 2009



EDUCATION AND TRAINING CATEGORIES

- **Short-term, on-the-job training (< 30 days) [ST]:** In occupations in this category, the skills needed to be fully qualified in the occupation can be acquired during a short demonstration of job duties or during 1 month or less of on-the-job experience or instruction.
- **Moderate-term, on-the-job training (1-12 months) [MT]:** In this category of occupations, the skills needed to be fully qualified in the occupation can be acquired during 1 to 12 months of combined on-the-job experience and informal training.
- **Long-term, on-the-job training (> 12 months) [LT]:** Occupations in this category generally require more than 12 months of on-the-job training or combined work experience and formal classroom instruction for workers to develop the skills necessary to be fully qualified. These occupations include formal and informal apprenticeships that may last up to 5 years. Long-term, on-the-job training also includes intensive occupation-specific, employer-sponsored programs that workers must complete. Among such programs are those conducted by fire and police academies and by schools for air traffic controllers and flight attendants. In other occupations—insurance sales and securities sales, for example—trainees take formal courses, often provided on the jobsite, to prepare for the required licensing exams. Individuals undergoing training generally are considered to be employed in the occupation. Also included in this category is the development of a natural ability—such as that possessed by musicians, athletes, actors, and other entertainers—that must be cultivated over several years, frequently in a non-work setting.
- **Work experience in a related occupation [WE]:** Most of the occupations in this category are first-line supervisors or managers of service, sales and related, production, or other occupations; or are management occupations.
- **Postsecondary vocational award [VA]:** Some programs last only a few weeks, others more than a year. Programs lead to a certificate or other award, but not a degree.
- **Associate's degree [AD]:** Completion of the degree usually requires at least 2 years of full-time academic study.
- **Bachelor's degree [BD]:** Completion of the degree generally requires at least 4 years, but not more than 5 years, of full-time academic study.
- **Bachelor's or higher degree, plus work experience [BD+]:** Most occupations in this category are management occupations. All require experience in a related non-management position for which a bachelor's or higher degree is usually required.
- **Master's degree [MD]:** Completion of the degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree.
- **Doctoral degree [DD]:** Completion of a Ph.D. or other doctoral degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree.
- **First professional degree [PD]:** Completion of the degree usually requires at least 3 years of full-time academic study beyond a bachelor's degree.

GROWTH DESCRIPTORS

Growth descriptors highlight an occupation's long-term job growth outlook and how rapidly new jobs will be created over the next ten years relative to an occupation's size and the average growth rate for all occupations. Keep in mind, this indicator is based on the percent change or growth rate of an occupation, not necessarily on the number of anticipated openings. Below are the descriptors and calculated ranges:

- **Exceptional Growth:** Growth rate at least 100% higher than the statewide average [**18.34% +**]
- **Very High Growth:** Growth rate at least 50% but less than 100% higher than the statewide average [**13.76% - 18.33%**]
- **High Growth:** Growth rate at least 25% but less than 50% higher than the statewide average [**11.46% - 13.75%**]
- **Avg to Above Avg Growth:** Growth rate equal to or less than 25% higher than the statewide average [**9.17% - 11.45%**]
- **Below Average Growth:** Growth rate is positive but less than the statewide average [**0% - 9.16%**]
- **Declining Growth:** Growth rate is negative

REPLACEMENT OPENINGS

Growth openings are the estimated number of new job opportunities to be created over a projections time horizon. But, opportunities also arise for existing jobs when workers permanently leave an occupation (e.g. promotion, retirement, death, etc.) and need to be replaced. Replacement openings often are used to learn about future job opportunities, to help with career guidance, and to estimate future training needs. Because workers entering an occupation often need training, replacement openings, added to growth openings, may be used to assess the minimum number of workers who will need to be trained for the occupation.

In order to estimate occupational replacement openings, replacement rates are calculated at a national level by the U.S. Bureau of Labor Statistics (BLS). The BLS methodology uses occupational employment data from the Current Population Survey (CPS), a household survey that collects demographic and employment information about individuals. BLS calculates an estimate of the net number of workers leaving an occupation who will need to be replaced by analyzing occupation-specific age cohort shifts. BLS analysts measure the net change in occupational employment for 13 different age cohorts over a five-year period (for a detailed methodology on replacements, please visit www.bls.gov/emp/ep_replacements.htm).

Some things to keep in mind when using North Dakota replacement openings data:

- **Replacement rates are not specific to North Dakota. Rather, national rates are applied to state-specific data.**
- **For most occupations, replacement openings provide many more job openings than employment growth does.**
- **The estimate of replacement openings does not count workers who change jobs but remain in the same occupation so it should not be interpreted as an indicator of turnover.**
- **Projected replacement openings assume that workers will continue to retire and otherwise exit an occupation at ages similar to those which have been observed in the recent past.**
- **The number of new entrants needed in an occupation is underestimated because replacement openings are based on net changes and do not capture the gross flows into and out of an occupation. Even if growth and replacement openings perfectly measured the need for new entrants, training needs would still be underestimated because some people who complete training do not enter the occupation for which they qualify.**
- **The occupation-specific replacement rate captures the impact of demographic, but not behavioral, changes.**
- **If employment is projected to decline, the number of opportunities resulting from growth is zero and replacement openings constitute the only source of opportunities. When employment declines, net separations increase because it is more likely that individuals lose their jobs and because fewer are entering the occupation. Replacement openings already capture these effects by reducing net separations by declines in employment. They should not be further reduced by projected employment declines.**
- **There are no replacement openings data by industry, only occupation.**

WORK ACTIVITIES

Work activities are defined as general types of job behaviors occurring on multiple jobs. These national data are collected, disseminated, and published by the Occupational Information Network (O*NET). The top work activities for each occupation are based on their highest importance scores. The 41 work activities are defined below:

Analyzing Data or Information: Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Assisting and Caring for Others: Providing personal assistance, medical attention, emotional support, or other personal care to others such as co-workers, customers, or patients.

Coaching and Developing Others: Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge and/or skills.

Communicating with Persons Outside Organization: Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.

Communicating with Supervisors, Peers, or Subordinates: Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Controlling Machines and Processes: Using control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).

Coordinating the Work and Activities of Others: Getting members of a group to work together to accomplish tasks.

Developing and Building Teams: Encouraging and building mutual trust, respect, and cooperation among team members.

Developing Objectives and Strategies: Establishing long-range objectives and specifying the strategies and actions to achieve them.

Documenting and Recording Information: Entering, transcribing, recording, storing, or maintaining information in written or electronic and magnetic form.

Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment: Providing documentation, detailed instructions, drawings, or specifications to tell others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used.

Establishing and Maintaining Interpersonal Relationships: Developing constructive and cooperative working relationships with others, and maintaining them over time.

Estimating the Quantifiable Characteristics of Products, Events, or Information: Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.

Evaluating Information to Determine Compliance with Standards: Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.

Getting Information: Observing, receiving, and otherwise obtaining information from all relevant sources.

Guiding, Directing, and Motivating Subordinates: Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.

Handling and Moving Objects: Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.

Identifying Objects, Actions, and Events: Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

Inspecting Equipment, Structures, or Material: Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

Interacting With Computers: Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

Interpreting the Meaning of Information for Others: Translating or explaining what information means and how it can be used.

WORK ACTIVITIES

Judging the Qualities of Things, Services, or People: Assessing the value, importance, or quality of things or people.

Making Decisions and Solving Problems: Analyzing information and evaluating results to choose the best solution and solve problems.

Monitor Processes, Materials, or Surroundings: Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

Monitoring and Controlling Resources: Monitoring and controlling resources and overseeing the spending of money.

Operating Vehicles, Mechanized Devices, or Equipment: Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.

Organizing, Planning, and Prioritizing Work: Developing specific goals and plans to prioritize, organize, and accomplish work.

Performing Administrative Activities: Performing day-to-day administrative tasks such as maintaining information files and processing paperwork.

Performing for or Working Directly with the Public: Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.

Performing General Physical Activities: Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

Processing Information: Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

Provide Consultation and Advice to Others: Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.

Repairing and Maintaining Electronic Equipment: Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Repairing and Maintaining Mechanical Equipment : Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.

Resolving Conflicts and Negotiating with Others: Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.

Scheduling Work and Activities: Scheduling events, programs, and activities, as well as the work of others.

Selling or Influencing Others: Convincing others to buy merchandise and/or goods or to otherwise change their minds or actions.

Staffing Organizational Units: Recruiting, interviewing, selecting, hiring, and promoting employees in an organization.

Thinking Creatively: Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.

Training and Teaching Others: Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.

Updating and Using Relevant Knowledge: Keeping up-to-date technically and applying new knowledge to the job.

SKILLS

Skills are defined as developed capacities that facilitate learning or the more rapid acquisition of knowledge. These national data are collected, disseminated, and published by the Occupational Information Network (O*NET). The top skills for each occupation are based on their highest importance scores. The 35 skill categories are defined below:

Active Learning: Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening: Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Complex Problem Solving: Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Coordination: Adjusting actions in relation to others' actions.

Critical Thinking: Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Equipment Maintenance: Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection: Determining the kind of tools and equipment needed to do a job.

Installation: Installing equipment, machines, wiring, or programs to meet specifications.

Instructing: Teaching others how to do something.

Judgment and Decision Making: Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Learning Strategies: Selecting and using training and instructional methods and procedures appropriate for the situation when learning or teaching new things.

Management of Financial Resources: Determining how money will be spent to get the work done, and accounting for these expenditures.

Management of Material Resources: Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources: Motivating, developing, and directing people as they work, identifying the best people for the job.

Mathematics: Using mathematics to solve problems.

Monitoring: Monitoring and/or assessing the performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Negotiation: Bringing others together and trying to reconcile differences.

Operation and Control: Controlling operations of equipment or systems.

Operation Monitoring: Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis: Analyzing needs and product requirements to create a design.

Persuasion: Persuading others to change their minds or behavior.

Programming: Writing computer programs for various purposes.

Quality Control Analysis: Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Reading Comprehension: Understanding written sentences and paragraphs in work related documents.

Repairing: Repairing machines or systems using the needed tools.

SKILLS

Science: Using scientific rules and methods to solve problems.

Service Orientation: Actively looking for ways to help people.

Social Perceptiveness: Being aware of others' reactions and understanding why they react as they do.

Speaking: Talking to others to convey information effectively.

Systems Analysis: Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

Systems Evaluation: Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Technology Design: Generating or adapting equipment and technology to serve user needs.

Time Management: Managing one's own time and the time of others.

Troubleshooting: Determining causes of operating errors and deciding what to do about them.

Writing: Communicating effectively in writing as appropriate for the needs of the audience.

KNOWLEDGE

Knowledge is defined as organized sets of principles and facts applying in general domains. These national data are collected, disseminated, and published by the Occupational Information Network (O*NET). The top knowledge areas for each occupation are based on their highest importance scores. The 33 knowledge categories are defined below:

Administration and Management: Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

Biology: Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Building and Construction: Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

Chemistry: Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Clerical: Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.

Communications and Media: Knowledge of media production, communication, and dissemination techniques and methods. This includes alternative ways to inform and entertain via written, oral, and visual media.

Computers and Electronics: Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Customer and Personal Service: Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

Design: Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Economics and Accounting: Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.

Education and Training: Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

Engineering and Technology: Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

English Language: Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Fine Arts: Knowledge of the theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.

Food Production: Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage and handling techniques.

Foreign Language: Knowledge of the structure and content of a foreign (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.

Geography: Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

History and Archeology: Knowledge of historical events and their causes, indicators, and effects on civilizations and cultures.

Law and Government: Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Mathematics: Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Mechanical: Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

KNOWLEDGE

Medicine and Dentistry: Knowledge of the information and techniques needed to diagnose and treat human injuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive healthcare measures.

Personnel and Human Resources: Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Philosophy and Theology: Knowledge of different philosophical systems and religions. This includes their basic principles, values, ethics, ways of thinking, customs, practices, and their impact on human culture.

Physics: Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

Production and Processing: Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Psychology: Knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.

Public Safety and Security: Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Sales and Marketing: Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

Sociology and Anthropology: Knowledge of group behavior and dynamics, societal trends and influences, human migrations, ethnicity, cultures and their history and origins.

Telecommunications: Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

Therapy and Counseling: Knowledge of principles, methods, and procedures for diagnosis, treatment, and rehabilitation of physical and mental dysfunctions, and for career counseling and guidance.

Transportation: Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.

SAMPLE LAYOUT

Chief Executives

8

9

10

1 11-1011 | Business Management, Administration & Finance | Enterprising | Below Average Growth | HIGH DEMAND | HIGH WAGE | ADVANCED SKILL

2 Alternate Job Title(s): Board Member; Chief Operating Officer; President

3 Occupational Description

Determine and formulate policies and provide the overall direction of companies or private and public sector organizations within the guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.

4 Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

5 Top Core Tasks

Direct and coordinate an organization's financial and budget activities to fund operations, maximize investments, and increase efficiency.

Confer with board members, organization officials, and staff members to discuss issues, coordinate activities, and resolve problems.

Analyze operations to evaluate performance of a company and its staff in meeting objectives, and to determine areas of potential cost reduction, program improvement, or policy change.

Direct, plan, and implement policies, objectives, and activities of organizations or businesses to ensure continuing operations, to maximize returns on investments, and to increase productivity.

Prepare budgets for approval, including those for funding and implementation of programs.

5 Top Work Activities

Making Decisions and Solving Problems

Getting Information

Communicating with Supervisors, Peers, or Subordinates

5 Top Skills

Complex Problem Solving

Judgment and Decision Making

Reading Comprehension

5 Top Knowledge

Administration and Management

Economics and Accounting

Law and Government

| 6 | 2008 | 2018 | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | 7 | Average | | |
|---|----------|------------|----------------|-------------------|------------------------|----------------|---|----------|------------------|---------------|
| | Estimate | Projection | | | | | | [Entry] | [Mean] | [Experienced] |
| | 1,034 | 1,063 | 2.80 | 29 | 291 | 320 | | \$57,003 | \$136,375 | \$176,060 |

- 1 • Occupational data are presented and arranged by a six-digit Standard Occupational Classification (SOC) code and title using the 2000 classification hierarchy. The absence of an occupation in the publication doesn't necessarily dictate its availability in North Dakota's job market. Also provided are designations for a career cluster, top interest category, and long-term growth descriptor. For more information on career clusters, interest categories or growth descriptors, turn to pages 1-5 and 9.
- 2 • **Alternate Job Title(s)** are taken from the 2000 SOC Manual. For your convenience, an Occupational Title Index (pg. 250) provides an alphabetical listing of all "official" and alternate job titles, their corresponding occupational codes, and page numbers.
- 3 • The **Occupational Description** is taken from the 2000 SOC Manual.
- 4 • Typical education and training categories. For more information, turn to pages 7-8.
- 5 • Data on **Top Core Tasks**, **Top Work Activities**, **Top Skills**, and **Top Knowledge** for each occupation are taken from the O*NET database with rankings based on the top importance scores within each category. For more information on work activities, skills, or knowledge, turn to pages 10-15.
- 6 • **Percent Change**, or growth rate, is the rate of change between an occupation's employment estimate and projection. Generally, rapidly growing occupations indicate favorable employment prospects with increased chances for advancement and mobility. Even modest employment growth in a large occupation can result in substantially more growth openings than a rapidly-growing small occupation. Above-average growth rates have been lightly shaded and bolded (the average growth rate across all occupations is 9.17%). **Growth Openings** are the number of anticipated openings due to new job growth. If percent change is negative, growth openings are zero. **Replacement Openings** are the number of anticipated openings due to workers who permanently leave an occupation (e.g. promotion, retirement, death, etc.). Replacements are openings for existing jobs; no new jobs are created. For more information on replacement openings, turn to page 9.
- 7 • All wage data are taken from the 2010 edition of *Wages for North Dakota Jobs*; newer wage data may have been released since the publication of this booklet. Above-average wages have been lightly shaded and bolded (the average wage across all occupations at the time of publication was \$35,970). Wage data exclude earnings from self-employed workers including farmers and ranchers. For a complete explanation of the methodology used in calculating the wages, please refer to the aforementioned publication.
- 8 • **High Demand** occupations are those with positive growth rates and total openings ranked within the top quartile for all occupations.
- 9 • **High Wage** occupations are those with an average annual wage at least 25% greater than the average for all occupations.
- 10 • Occupations fall within one of five skill cluster categories: **Low Skill**, **Some Skill**, **Medium Skill**, **High Skill**, or **Advanced Skill**. Each occupation's experience, education, and job training requirements, as outlined by O*NET job zones, are the primary determinants of a skill cluster assignment. For more information, turn to page 6.

POSTSECONDARY PROGRAM OFFERINGS

What follows is a listing of postsecondary program offerings by the 19 North Dakota University System (NDUS) institutions. Registrars at each institution reported the information. It has been summarized by four-digit 2010 Classification of Instructional Programs (CIP) code and may differ from the source material. The source publication is titled *Programs Offered and Programs Completed at North Dakota Institutions of Postsecondary Education* and covers the 2008-2009 school year, the latest time period for which data were compiled. While the information may not necessarily be timely, it gives prospective students a general idea of the programs offered, degrees offered, and participating institutions. Keep in mind, this is a generalized summary. Contact an institution of interest for details regarding specific program offerings, program requirements, and degrees offered. An asterisk (*) indicates that the institution offers an alternative delivery option (e.g. online) for all or part of a program and/or degree. An alternative delivery option occurs outside the traditional classroom setting.

INSTITUTION CODE KEY:

- | | | |
|---|---|--|
| BSC Bismarck State College | MiSU Minot State University | TMCC Turtle Mountain Community College |
| CCCC Cankdeska Cikana Community College | MiSU-B Dakota College at Bottineau | UM University of Mary |
| DSU Dickinson State University | NDSCS North Dakota State College of Science | UND University of North Dakota |
| FBCC Fort Berthold Community College | NDSU North Dakota State University | UTTC United Tribes Technical College |
| JC Jamestown College | SBC Sitting Bull College | VCSU Valley City State University |
| LRSC Lake Region State College | TBC Trinity Bible College | WSC Williston State College |
| MaSU Mayville State University | | |

| CIP Code | CIP Title | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 01 | Agriculture, Agriculture Operations, and Related Sciences | | | | | | |
| 01.00 | Agriculture, General | | | | | | |
| | DSU | | | | X | | |
| | * WSC | | X | | | | |
| 01.01 | Agricultural Business and Management | | | | | | |
| | BSC | | X | | | | |
| | DSU | X | X | | | | |
| | FBCC | X | X | | | | |
| | LRSC | | X | | | | |
| | NDSCS | | X | | | | |
| | NDSU | | | | X | | X |
| | SBC | X | X | | | | |
| 01.02 | Agricultural Mechanization | | | | | | |
| | NDSCS | | X | | | | |
| | NDSU | | | | X | | X |
| 01.03 | Agricultural Production Operations | | | | | | |
| | CCCC | | X | | | | |
| | NDSU | | | | X | | |
| | TMCC | X | | | | | |
| 01.04 | Agricultural and Food Products Processing | | | | | | |
| | NDSU | | | | | | X |
| 01.05 | Agricultural and Domestic Animal Services | | | | | | |
| | NDSU | | | X | X | | |
| 01.06 | Applied Horticulture and Horticultural Business Services | | | | | | |
| | * MiSU-B | X | X | | | | |
| | NDSU | | | | X | | |
| 01.07 | International Agriculture | | | | | | |
| | NDSU | | | | | | X |
| 01.08 | Agricultural Public Services | | | | | | |
| | NDSU | | | | X | | |
| 01.09 | Animal Sciences | | | | | | |
| | NDSU | | | X | X | | X |
| 01.10 | Food Science and Technology | | | | | | |
| | NDSU | | | | X | X | X |
| 01.11 | Plant Sciences | | | | | | |
| | NDSU | | | | X | | X |
| | WSC | X | | | | | |
| 01.12 | Soil Sciences | | | | | | |
| | NDSU | | | | X | | X |
| 03 | Natural Resources and Conservation | | | | | | |
| 03.01 | Natural Resources Conservation and Research | | | | | | |
| | FBCC | | X | | | | |
| | MiSU-B | | X | | | | |
| | SBC | X | X | | X | | |
| | UND | | | | | | X |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|---|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 03.02 | Natural Resources Management and Policy | | | | | | |
| | CCCC | | X | | | | |
| | NDSU | | | | X | | X |
| 03.05 | Forestry | | | | | | |
| | MiSU-B | X | X | | | | |
| 03.06 | Wildlife and Wildlands Science and Management | | | | | | |
| | MiSU-B | | X | | | | |
| | * VCSU | | | | X | | |
| 04 | Architecture and Related Services | | | | | | |
| 04.02 | Architecture | | | | | | |
| | NDSU | | | | X | | X |
| 04.04 | Environmental Design | | | | | | |
| | NDSU | | | | X | | |
| 04.06 | Landscape Architecture | | | | | | |
| | NDSU | | | | X | | |
| 05 | Area, Ethnic, Cultural, Gender, and Group Studies | | | | | | |
| 05.01 | Area Studies | | | | | | |
| | UND | | | | X | | |
| 05.02 | Ethnic, Cultural Minority, Gender, and Group Studies | | | | | | |
| | CCCC | | X | | | | |
| | NDSU | | | | X | | |
| | SBC | | X | | | | |
| | UND | | | | X | | |
| 09 | Communication, Journalism, and Related Programs | | | | | | |
| 09.01 | Communication and Media Studies | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 09.07 | Radio, Television, and Digital Communication | | | | | | |
| | MiSU | | | | X | | |
| | * NDSU | | | | X | X | |
| 09.09 | Public Relations, Advertising, and Applied Communication | | | | | | |
| | BSC | | X | | | | |
| | NDSU | | | | X | | |
| 09.10 | Publishing | | | | | | |
| | UND | | | X | | | |
| 10 | Communications Technologies/Technicians and Support Services | | | | | | |
| 10.03 | Graphic Communications | | | | | | |
| | UND | | | | X | | |
| 11 | Computer and Information Sciences and Support Services | | | | | | |
| 11.01 | Computer and Information Sciences, General | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | * NDSCS | X | X | | | | |
| | SBC | X | X | | | | |
| | * UM | | | | X | | |
| | UND | | | | X | | X |
| | UTTC | | X | | | | |
| | * VCSU | | | X | X | | |
| 11.02 | Computer Programming | | | | | | |
| | MiSU | | | X | | | |
| 11.03 | Data Processing | | | | | | |
| | DSU | | | | X | | |
| | MaSU | | | X | | | |
| | WSC | X | X | | | | |
| 11.04 | Information Science/Studies | | | | | | |
| | * MiSU | | | | X | | |
| | * UM | | | | X | | |
| 11.05 | Computer Systems Analysis | | | | | | |
| | UND | | | | X | | |
| 11.07 | Computer Science | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | | | X |
| 11.08 | Computer Software and Media Applications | | | | | | |
| | * BSC | X | X | | | | |
| | * MiSU | | | X | | | |
| | MiSU-B | X | | | | | |
| | * VCSU | | | X | | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 11.09 | Computer Systems Networking and Telecommunications | | | | | | |
| | * BSC | | X | | | | |
| | CCCC | | X | | | | |
| | FBCC | X | X | | | | |
| | MiSU-B | | X | | | | |
| 11.10 | Computer/Information Technology Administration and Mgmt | | | | | | |
| | MiSU-B | | X | | | | |
| | WSC | X | X | | | | |
| 12 | Personal and Culinary Services | | | | | | |
| 12.05 | Culinary Arts and Related Services | | | | | | |
| | NDSCS | X | X | | | | |
| 13 | Education | | | | | | |
| 13.01 | Education, General | | | | | | |
| | * MiSU | | | | | | X |
| | * UND | | | | | | X |
| | * VCSU | | | | | | X |
| 13.04 | Educational Administration and Supervision | | | | | | |
| | NDSU | | | | | | X |
| | UM | | | | | | X |
| | UND | | | | | | X |
| 13.05 | Educational/Instructional Media Design | | | | | | |
| | MaSU | | | | X | | |
| | * UND | | | | | X | X |
| 13.06 | Educational Assessment, Evaluation, and Research | | | | | | |
| | NDSU | | | | | | X |
| 13.10 | Special Education and Teaching | | | | | | |
| | * MiSU | | X | | X | | |
| | * UM | | | | X | | X |
| | * UND | | | | | X | X |
| 13.11 | Student Counseling and Personnel Services | | | | | | |
| | NDSU | | | | | | X |
| | * UM | | | | | | X |
| | UND | | | | | | X |
| 13.12 | Teacher Edu. and Professional Development, Specific Level | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | * MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | | X | X |
| | SBC | | | | X | | |
| | TBC | | | | X | | |
| | TMCC | X | X | | X | | |
| | UM | | | | X | | X |
| | * UND | | | | X | | X |
| | * UTTC | | X | | X | | |
| | * VCSU | | | | X | | |
| 13.13 | Teacher Edu. and Professional Development, Specific Subject | | | | | | |
| | * DSU | | | | X | | |
| | JC | | | | X | | |
| | * LRSC | | X | | | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | X |
| | NDSU | | | | X | | X |
| | TMCC | | | | X | | |
| | UM | | | | X | | X |
| | UND | | | | X | X | X |
| | * VCSU | | | | X | | |
| 13.15 | Teaching Assistants/Aides | | | | | | |
| | * BSC | X | X | | | | |
| | * LRSC | X | X | | | | |
| | * MiSU-B | X | X | | | | |
| | * NDSCS | X | X | | | | |
| | SBC | X | X | | | | |
| | * WSC | X | X | | | | |
| 14 | Engineering | | | | | | |
| 14.01 | Engineering, General | | | | | | |
| | NDSU | | | | | | X |
| | UM | | | | X | | |
| 14.03 | Agricultural Engineering | | | | | | |
| | NDSU | | | | X | | X |
| 14.07 | Chemical Engineering | | | | | | |
| | * UND | | | | X | | X |
| 14.08 | Civil Engineering | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|---|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 14.09 | Computer Engineering | | | | | | |
| | NDSU | | | | X | X | X |
| 14.10 | Electrical, Electronics and Communications Engineering | | | | | | |
| | NDSU | | | | X | | X |
| | * UND | | | | X | | X |
| 14.14 | Environmental/Environmental Health Engineering | | | | | | |
| | NDSU | | | | | | X |
| | UND | | | | X | X | X |
| 14.18 | Materials Engineering | | | | | | |
| | NDSU | | | | | | X |
| 14.19 | Mechanical Engineering | | | | | | |
| | NDSU | | | | X | | X |
| | * UND | | | | X | | X |
| 14.33 | Construction Engineering | | | | | | |
| | NDSU | | | | X | | |
| 14.35 | Industrial Engineering | | | | | | |
| | NDSU | | | | X | | X |
| 14.36 | Manufacturing Engineering | | | | | | |
| | NDSU | | | | X | | X |
| 14.39 | Geological/Geophysical Engineering | | | | | | |
| | UND | | | | X | | X |
| 15 | Engineering Technologies and Engineering-Related Fields | | | | | | |
| 15.01 | Architectural Engineering Technologies/Technicians | | | | | | |
| | * NDSCS | | X | | | | |
| 15.02 | Civil Engineering Technologies/Technicians | | | | | | |
| | NDSCS | | X | | | | |
| 15.03 | Electrical Engineering Technologies/Technicians | | | | | | |
| | * BSC | X | X | | | | |
| | LRSC | X | X | | | | |
| | NDSCS | | X | | | | |
| 15.04 | Electromechanical Instrumentation Technologies | | | | | | |
| | BSC | X | X | | | | |
| 15.05 | Environmental Control Technologies/Technicians | | | | | | |
| | MISU-B | X | X | | | | |
| | NDSCS | X | X | | | | |
| | SBC | | X | | | | |
| 15.06 | Industrial Production Technologies/Technicians | | | | | | |
| | * BSC | X | X | | | | |
| | NDSCS | | X | | | | |
| | * TMCC | X | X | | | | |
| | UND | | | | X | | X |
| 15.07 | Quality Control and Safety Technologies/Technicians | | | | | | |
| | UND | | | | X | | |
| 15.09 | Mining and Petroleum Technologies/Technicians | | | | | | |
| | WSC | X | | | | | |
| 15.10 | Construction Engineering Technologies | | | | | | |
| | NDSCS | | X | | | | |
| 15.14 | Nuclear Engineering Technologies/Technicians | | | | | | |
| | * BSC | X | X | | | | |
| 15.16 | Nanotechnology | | | | | | |
| | * NDSCS | X | X | | | | |
| 16 | Foreign Languages, Literatures, and Linguistics | | | | | | |
| 16.01 | Linguistic, Comparative, and Related Language Studies | | | | | | |
| | * LRSC | X | X | | | | |
| | MISU | | | | X | | |
| | UND | | | | | | X |
| 16.05 | Germanic Languages, Literatures, and Linguistics | | | | | | |
| | MISU | | | | X | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | |
| 16.09 | Romance Languages, Literatures, and Linguistics | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MISU | | | | X | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | |
| | * VCSU | | | | X | | |
| 16.12 | Classics/Classical Languages, Literatures, and Linguistics | | | | | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | |
| 19 | Family and Consumer Sciences/Human Sciences | | | | | | |
| 19.05 | Foods, Nutrition, and Related Services | | | | | | |
| | * NDSU | | | | | | X |
| 19.06 | Housing and Human Environments | | | | | | |
| | NDSU | | | | X | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 19.07 | Human Development, Family Studies, and Related Services | | | | | | |
| | CCCC | | X | | | | |
| | FBCC | X | X | | | | |
| | * LRSC | X | X | | | | |
| | * MaSU | | X | | X | | |
| | MiSU-B | X | X | | | | |
| | NDSU | | | | X | | X |
| | SBC | | X | | | | |
| 19.09 | Apparel and Textiles | | | | | | |
| | * NDSU | | | | X | X | |
| 22 | Legal Professions and Studies | | | | | | |
| 22.01 | Law | | | | | | |
| | UND | | | | | | X |
| 22.03 | Legal Support Services | | | | | | |
| | BSC | X | X | | | | |
| | * LRSC | X | X | | | | |
| 23 | English Language and Literature/Letters | | | | | | |
| 23.01 | English Language and Literature, General | | | | | | |
| | * DSU | | | | X | | |
| | JC | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 23.13 | Rhetoric and Composition/Writing Studies | | | | | | |
| | DSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| 24 | Liberal Arts and Sciences, General Studies and Humanities | | | | | | |
| 24.01 | Liberal Arts and Sciences, General Studies and Humanities | | | | | | |
| | * BSC | | X | | | | |
| | CCCC | | X | | | | |
| | * DSU | | X | | X | | |
| | FBCC | | X | | | | |
| | * LRSC | | X | | | | |
| | MaSU | | | | X | | |
| | * MiSU | | | | X | | |
| | * MiSU-B | | X | | | | |
| | NDSCS | | X | | | | |
| | NDSU | | | | X | | |
| | SBC | X | X | | | | |
| | TBC | | X | | | | |
| | TMCC | | X | | | | |
| | UM | | | | X | | |
| | * UND | | | | X | | |
| | * VCSU | | | | X | | |
| | * WSC | | | | | | |
| 26 | Biological and Biomedical Sciences | | | | | | |
| 26.01 | Biology, General | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 26.02 | Biochemistry, Biophysics and Molecular Biology | | | | | | |
| | JC | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | | | X |
| 26.03 | Botany/Plant Biology | | | | | | |
| | NDSU | | | | X | | X |
| 26.04 | Cell/Cellular Biology and Anatomical Sciences | | | | | | |
| | NDSU | | | | | | X |
| | UND | | | | | | X |
| 26.05 | Microbiological Sciences and Immunology | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | | | X |
| 26.07 | Zoology/Animal Biology | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|---------------------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 26.08 | Genetics NDSU | | | | | | X |
| 26.09 | Physiology, Pathology and Related Sciences NDSU | | | | | | X |
| 26.10 | Pharmacology and Toxicology UND | | | | | | X |
| 26.12 | Biotechnology NDSU | | | | X | | |
| 26.13 | Ecology, Evolution, Systematics, and Population Biology NDSU | | | | | | X |
| 27 | Mathematics and Statistics | | | | | | |
| 27.01 | Mathematics DSU FBCC JC MaSU MiSU NDSU UM UND * VCSU | | X | | X X X X X X | | X X |
| 27.03 | Applied Mathematics JC | | | | X | | |
| 27.05 | Statistics NDSU | | | | X | X | X |
| 30 | Multi/Interdisciplinary Studies | | | | | | |
| 30.11 | Gerontology NDSU | | | | | X | |
| 30.20 | International/Global Studies NDSU UND | | | | X X | | |
| 31 | Parks, Recreation, Leisure, and Fitness Studies | | | | | | |
| 31.01 | Parks, Recreation and Leisure Studies MiSU-B NDSU | | X | | X | | |
| 31.03 | Parks, Recreation and Leisure Facilities Management UND | | | | X | | |
| 31.05 | Health and Physical Education/Fitness DSU JC MaSU MiSU NDSU UM UND * VCSU | | | | X X X X X X X | | X |
| 38 | Philosophy and Religious Studies | | | | | | |
| 38.01 | Philosophy NDSU UND | | | | X X | | |
| 38.02 | Religion/Religious Studies UM UND | | | | X X | | |
| 39 | Theology and Religious Vocations | | | | | | |
| 39.02 | Bible/Biblical Studies TBC | | | | X | | |
| 39.03 | Missions/Missionary Studies and Missiology TBC | | | | X | | |
| 39.06 | Theological and Ministerial Studies TBC UM | | | | X X | | |
| 40 | Physical Sciences | | | | | | |
| 40.01 | Physical Sciences MiSU | | | | X | | |
| 40.04 | Atmospheric Sciences and Meteorology UND | | | | X | | X |
| 40.05 | Chemistry DSU JC MaSU MiSU NDSU * UND * VCSU | | | | X X X X X X X | | X X |
| 40.06 | Geological and Earth Sciences/Geosciences MiSU NDSU UND | | | | X X X | | X |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|---|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 40.08 | Physics | | | | | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |
| 42 | Psychology | | | | | | |
| 42.01 | Psychology, General | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | * MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 42.27 | Research and Experimental Psychology | | | | | | |
| | NDSU | | | | X | | |
| 42.28 | Clinical, Counseling and Applied Psychology | | | | | | |
| | MaSU | | | | X | | |
| | MiSU | | | | | | X |
| | * UND | | | | | | X |
| 43 | Homeland Security and Protective Services | | | | | | |
| 43.01 | Criminal Justice and Corrections | | | | | | |
| | * BSC | | X | | | | |
| | JC | | | | X | | |
| | * LRSC | X | X | | | | |
| | * MiSU | | | X | X | | X |
| | NDSU | | | | X | | X |
| | SBC | X | X | | | | |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * UTTC | | X | | | | |
| 43.02 | Fire Protection | | | | | | |
| | * BSC | X | X | | | | |
| 44 | Public Administration and Social Service Professions | | | | | | |
| 44.04 | Public Administration | | | | | | |
| | * BSC | X | | | | | |
| | CCCC | | X | | | | |
| | FBCC | | X | | | | |
| | * UND | | | | X | X | X |
| 44.05 | Public Policy Analysis | | | | | | |
| | UND | | | | | X | |
| 44.07 | Social Work | | | | | | |
| | * BSC | | X | | | | |
| | FBCC | | X | | | | |
| | MiSU | | | | X | | |
| | UM | | | | X | | |
| | * UND | | | | X | | X |
| 45 | Social Sciences | | | | | | |
| 45.01 | Social Sciences, General | | | | | | |
| | * DSU | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UM | | | | X | | |
| | * UND | | | | X | | |
| | * VCSU | | | | X | | |
| 45.02 | Anthropology | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | |
| 45.06 | Economics | | | | | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |
| 45.07 | Geography and Cartography | | | | | | |
| | BSC | X | X | | | | |
| | MiSU-B | | X | | | | |
| | UND | | | | X | X | X |
| 45.10 | Political Science and Government | | | | | | |
| | DSU | | | | X | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | |
| 45.11 | Sociology | | | | | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|-----------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 46 | Construction Trades | | | | | | |
| 46.02 | Carpenters | | | | | | |
| | BSC | X | X | | | | |
| | CCCC | X | | | | | |
| | TMCC | X | X | | | | |
| | UTTC | X | X | | | | |
| 46.03 | Electrical and Power Transmission Installers | | | | | | |
| | BSC | X | X | | | | |
| 46.04 | Building/Construction Finishing, Management, and Inspection | | | | | | |
| | NDSCS | | X | | | | |
| 46.05 | Plumbing and Related Water Supply Services | | | | | | |
| | FBCC | X | X | | | | |
| | NDSCS | X | | | | | |
| 47 | Mechanic and Repair Technologies/Technicians | | | | | | |
| 47.01 | LRSC | | | | | | |
| | LRSC | | X | | | | |
| 47.02 | Heating, Air Conditioning, Ventilation and Refrigeration | | | | | | |
| | BSC | X | X | | | | |
| | NDSCS | | X | | | | |
| 47.03 | Heavy/Industrial Equipment Maintenance Technologies | | | | | | |
| | BSC | X | X | | | | |
| 47.06 | Vehicle Maintenance and Repair Technologies | | | | | | |
| | BSC | X | X | | | | |
| | CCCC | | X | | | | |
| | LRSC | X | X | | | | |
| | NDSCS | X | X | | | | |
| | UTTC | X | X | | | | |
| | WSC | X | X | | | | |
| 48 | Precision Production | | | | | | |
| 48.05 | Precision Metal Working | | | | | | |
| | BSC | X | X | | | | |
| | * LRSC | X | | | | | |
| | * NDSCS | X | X | | | | |
| | TMCC | X | | | | | |
| 49 | Transportation and Materials Moving | | | | | | |
| 49.01 | Air Transportation | | | | | | |
| | * UND | | | | X | | X |
| 50 | Visual and Performing Arts | | | | | | |
| 50.04 | Design and Applied Arts | | | | | | |
| | BSC | X | X | | | | |
| | FBCC | X | X | | | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | |
| 50.05 | Drama/Theatre Arts and Stagecraft | | | | | | |
| | DSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |
| 50.07 | Fine and Studio Arts | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 50.09 | Music | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | TBC | | X | | X | | |
| | UM | | | | X | | |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |
| 50.10 | Arts, Entertainment, and Media Management | | | | | | |
| | DSU | | | | X | | |
| | MiSU | | | | X | | |
| | UTTC | X | X | | | | |
| | * VCSU | | | | X | | |
| 51 | Health Professions and Related Programs | | | | | | |
| 51.02 | Communication Disorders Sciences and Services | | | | | | |
| | * LRSC | | X | | | | |
| | MiSU | | | | X | | X |
| | UND | | | | X | | X |
| | * WSC | | X | | | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 51.06 | Dental Support Services and Allied Professions | | | | | | |
| | NDSU | X | X | | | | |
| 51.07 | Health and Medical Administrative Services | | | | | | |
| | BSC | X | X | | | | |
| | FBCC | | X | | | | |
| | * MiSU-B | X | X | | | | |
| | * NDSU | X | X | | | | |
| | TMCC | X | X | | | | |
| | * UM | | | | | | X |
| | * UND | | | | | X | |
| | * UTTC | X | X | | | | |
| | * WSC | X | X | | | | |
| 51.08 | Allied Health and Medical Assisting Services | | | | | | |
| | * MiSU-B | X | X | | | | |
| | * NDSU | X | X | | | | |
| | NDSU | | | | X | | |
| | * WSC | | X | | | | |
| 51.09 | Allied Health Diagnostic, Intervention, and Treatment | | | | | | |
| | * BSC | X | X | | | | |
| | JC | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | |
| | UM | | X | | X | | |
| | UND | | | | X | X | X |
| 51.10 | Clinical/Medical Laboratory Science and Allied Professions | | | | | | |
| | BSC | X | X | | | | |
| | JC | | | | X | | |
| | MaSU | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | |
| | UM | | | | X | | |
| | * UND | | | X | X | X | X |
| 51.11 | Health/Medical Preparatory Programs | | | | | | |
| | * VCSU | | | | X | | |
| 51.12 | Medicine | | | | | | |
| | UND | | | | | | X |
| 51.15 | Mental and Social Health Services and Allied Professions | | | | | | |
| | FBCC | | X | | | | |
| | MiSU | | | | X | | |
| | NDSU | | X | | | | |
| | SBC | X | X | | | | |
| | * UM | | | | X | | X |
| | * UTTC | X | X | | | | |
| | * WSC | X | X | | | | |
| 51.20 | Pharmacy, Pharmaceutical Sciences, and Administration | | | | | | |
| | NDSU | | | | X | | X |
| 51.22 | Public Health | | | | | | |
| | DSU | | | | X | | |
| 51.23 | Rehabilitation and Therapeutic Professions | | | | | | |
| | UM | | | | | | X |
| | UND | | | | X | | X |
| 51.31 | Dietetics and Clinical Nutrition Services | | | | | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | |
| | * UTTC | | X | | | | |
| 51.35 | Somatic Bodywork and Related Therapeutic Services | | | | | | |
| | * WSC | X | X | | | | |
| 51.38 | R.N., Nursing Admin., Nursing Research and Clinical Nursing | | | | | | |
| | * BSC | | X | | | | |
| | CCCC | | X | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | * LRSC | | X | | | | |
| | * MiSU | | | | X | | |
| | * MiSU-B | | X | | | | |
| | * NDSU | | X | | | | |
| | NDSU | | | | X | | X |
| | * UM | | | | X | | X |
| | * UND | | | | X | X | X |
| | * WSC | | X | | | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|---|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 51.39 | Practical Nursing, Vocational Nursing and Nursing Assistants | | | | | | |
| | * BSC | X | | | | | |
| | * DSU | | X | | | | |
| | FBCC | X | X | | | | |
| | * LRSC | X | X | | | | |
| | * MiSU-B | X | | | | | |
| | * NDSCS | | X | | | | |
| | SBC | X | X | | | | |
| | * UTTC | | X | | | | |
| | * WSC | X | | | | | |
| 52 | Business, Mgmt, Marketing, and Related Support Services | | | | | | |
| 52.01 | Business/Commerce, General | | | | | | |
| | BSC | | X | | | | |
| | * DSU | | | | X | | |
| | MaSU | | X | | | | |
| | TBC | | X | | | | |
| 52.02 | Business Administration, Management and Operations | | | | | | |
| | * BSC | | | | X | | |
| | CCCC | | X | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | * LRSC | | X | | | | |
| | * MaSU | | | | X | | |
| | * MiSU | | | | X | | X |
| | * NDSCS | X | X | | | X | X |
| | NDSU | | | | X | | |
| | SBC | X | X | | X | | |
| | TBC | | | | X | | |
| | TMCC | X | X | | | | |
| | * UM | | X | | X | | X |
| | * UND | | | X | X | | X |
| | * UTTC | X | X | | | | |
| | * VCSU | | | | X | | |
| 52.03 | Accounting and Related Services | | | | | | |
| | CCCC | | X | | | | |
| | DSU | | | | X | | |
| | FBCC | | X | | | | |
| | JC | | | | X | | |
| | * LRSC | | X | | | | |
| | MiSU | | | | X | | |
| | * MiSU-B | X | X | | | | |
| | NDSU | | | | X | | X |
| | * UM | | X | | X | | X |
| | UND | | | | X | | X |
| | * WSC | | X | | | | |
| 52.04 | Business Operations Support and Assistant Services | | | | | | |
| | * BSC | X | X | | | | |
| | CCCC | | X | | | | |
| | DSU | | X | | | | |
| | FBCC | X | X | | | | |
| | * LRSC | X | X | | | | |
| | MaSU | | X | | | | |
| | * MiSU | | | X | | | |
| | * MiSU-B | X | X | | | | |
| | * NDSCS | X | X | | | | |
| | SBC | | X | | | | |
| | TMCC | X | X | | | | |
| | UTTC | X | X | | | | |
| | * WSC | X | | | | | |
| 52.05 | Business/Corporate Communications | | | | | | |
| | NDSU | | | | X | | |
| | UM | | | | X | | |
| 52.06 | Business/Managerial Economics | | | | | | |
| | UND | | | | X | | |
| 52.07 | Entrepreneurial and Small Business Operations | | | | | | |
| | * DSU | | | X | | | |
| | MiSU-B | | X | | | | |
| | TMCC | X | X | | | | |
| | UND | | | X | X | | |
| | UTTC | | X | | | | |
| | * WSC | X | X | | | | |

POSTSECONDARY PROGRAM OFFERINGS

| CIP Code | CIP Title NDUS Institution | DEGREE OFFERED | | | | | |
|--------------|--|-------------------------|-----------------------|---------------------------|----------------------|-------------------------|--------------------|
| | | Certificate/ Diploma | Associate's Degree | Under-Grad Certificate | Bachelor's Degree | Graduate Certificate | Advanced Degree |
| 52.08 | Finance and Financial Management Services | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MiSU | | | | X | | |
| | * NDSCS | | X | | | | |
| | NDSU | | | X | X | X | |
| | UM | | | | X | | |
| | UND | | | | X | | |
| 52.09 | Hospitality Administration/Management | | | | | | |
| | BSC | X | X | | | | |
| | NDSU | | | | X | | |
| 52.10 | Human Resources Management and Services | | | | | | |
| | * DSU | | | X | X | | |
| | NDSU | | | X | | | |
| | UND | | | | X | | |
| | * VCSU | | | | X | | |
| 52.11 | International Business | | | | | | |
| | DSU | | | | X | | |
| | MiSU | | | | X | | |
| 52.12 | Management Information Systems and Services | | | | | | |
| | JC | | | | X | | |
| | * LRSC | X | X | | | | |
| | * MiSU | | | | X | X | X |
| | NDSU | | | | X | | |
| | UM | | | | X | | |
| 52.14 | Marketing | | | | | | |
| | FBCC | X | X | | | | |
| | MiSU | | | | X | | |
| | * MiSU-B | X | X | | | | |
| | NDSU | | | X | X | | |
| | * UM | | | | X | | |
| | UND | | | | X | | |
| | WSC | X | X | | | | |
| 52.18 | General Sales, Merchandising and Related Marketing Ops. | | | | | | |
| | LRSC | X | X | | | | |
| 52.20 | Construction Management | | | | | | |
| | NDSU | | | | X | | X |
| 54 | History | | | | | | |
| 54.01 | History | | | | | | |
| | DSU | | | | X | | |
| | JC | | | | X | | |
| | MiSU | | | | X | | |
| | NDSU | | | | X | | X |
| | UND | | | | X | | X |
| | * VCSU | | | | X | | |

POSTSECONDARY PROGRAM COMPLETIONS

Postsecondary program completion data provide an objective overview of the potential skills, abilities, and knowledge acquired by future workforce participants readying themselves to enter the job market for the first time or current workforce participants retraining or upgrading their skills to help with a career transition. Postsecondary program completions are compiled annually by the North Dakota University System (NDUS). Registrars at each of 19 NDUS postsecondary institutions reported completion data for the July 2008 to June 2009 time period. A program completion is defined as one in which an individual has met all the requirements to obtain a degree or certificate (16 or more credit hours at the undergraduate level or 9 or more credit hours at the graduate level) in that field of study. These results exclude information about vocational and technical program completions outside of the NDUS. Keep in mind that with the advent of distance learning options (e.g. online), it should not be assumed that all program completers necessarily live in-state. Institutional programs are coded in accordance with the 2010 Classification of Instructional Programs (CIP) system and may differ from the source material. The CIP system is provided by the National Center for Education Statistics (NCES) branch of the U.S. Department of Education and is the national standard on instructional program classifications. For purposes of this publication, we have summarized data at the two- and four-digit CIP categories and whether completions resulted in a bachelor's degree, less than a bachelor's degree, or higher than a bachelor's degree. For additional detail, please refer to the NDUS publication titled *Programs Offered and Programs Completed at North Dakota Institutions of Postsecondary Education*.

| CIP Code | CIP Title | TOTAL, ALL PROGRAM COMPLETIONS | PCT OF ALL PROGRAM COMPLETIONS | LESS THAN BD | BD | HIGHER THAN BD |
|---------------------------------------|---|--------------------------------|--------------------------------|--------------|--------------|----------------|
| TOTAL, ALL PROGRAM COMPLETIONS | | 10,653 | 100.00 | 2,899 | 5,917 | 1,837 |
| 01 | Agriculture, Agriculture Operations, and Related Sciences | 256 | 2.40 | 76 | 141 | 39 |
| 01.00 | Agriculture, General | 25 | 0.23 | 1 | 24 | 0 |
| 01.01 | Agricultural Business and Management | 85 | 0.80 | 41 | 35 | 9 |
| 01.02 | Agricultural Mechanization | 32 | 0.30 | 17 | 15 | 0 |
| 01.03 | Agricultural Production Operations | 24 | 0.23 | 1 | 23 | 0 |
| 01.04 | Agricultural and Food Products Processing | 1 | 0.01 | 0 | 0 | 1 |
| 01.05 | Agricultural and Domestic Animal Services | 5 | 0.05 | 0 | 5 | 0 |
| 01.06 | Applied Horticulture and Horticultural Business Services | 19 | 0.18 | 14 | 5 | 0 |
| 01.07 | International Agriculture | 1 | 0.01 | 0 | 0 | 1 |
| 01.09 | Animal Sciences | 29 | 0.27 | 0 | 20 | 9 |
| 01.10 | Food Science and Technology | 13 | 0.12 | 0 | 6 | 7 |
| 01.11 | Plant Sciences | 20 | 0.19 | 2 | 7 | 11 |
| 01.12 | Soil Sciences | 2 | 0.02 | 0 | 1 | 1 |
| 03 | Natural Resources and Conservation | 49 | 0.46 | 13 | 26 | 10 |
| 03.01 | Natural Resources Conservation and Research | 13 | 0.12 | 8 | 2 | 3 |
| 03.02 | Natural Resources Management and Policy | 24 | 0.23 | 2 | 15 | 7 |
| 03.05 | Forestry | 3 | 0.03 | 3 | 0 | 0 |
| 03.06 | Wildlife and Wildlands Science and Management | 9 | 0.08 | 0 | 9 | 0 |
| 04 | Architecture and Related Services | 137 | 1.29 | 0 | 75 | 62 |
| 04.02 | Architecture | 63 | 0.59 | 0 | 1 | 62 |
| 04.04 | Environmental Design | 67 | 0.63 | 0 | 67 | 0 |
| 04.06 | Landscape Architecture | 7 | 0.07 | 0 | 7 | 0 |
| 05 | Area, Ethnic, Cultural, Gender, and Group Studies | 13 | 0.12 | 2 | 11 | 0 |
| 05.01 | Area Studies | 5 | 0.05 | 0 | 5 | 0 |
| 05.02 | Ethnic, Cultural Minority, Gender, and Group Studies | 8 | 0.08 | 2 | 6 | 0 |
| 09 | Communication, Journalism, and Related Programs | 193 | 1.81 | 0 | 174 | 19 |
| 09.01 | Communication and Media Studies | 134 | 1.26 | 0 | 115 | 19 |
| 09.07 | Radio, Television, and Digital Communication | 28 | 0.26 | 0 | 28 | 0 |
| 09.09 | Public Relations, Advertising, and Applied Communication | 31 | 0.29 | 0 | 31 | 0 |
| 10 | Communications Technologies/Technicians and Support Services | 10 | 0.09 | 0 | 10 | 0 |
| 10.03 | Graphic Communications | 9 | 0.08 | 0 | 9 | 0 |
| 10.99 | Communications Technology and Support Svcs., Other | 1 | 0.01 | 0 | 1 | 0 |
| 11 | Computer and Information Sciences and Support Services | 361 | 3.39 | 195 | 142 | 24 |
| 11.01 | Computer and Information Sciences, General | 94 | 0.88 | 25 | 63 | 6 |
| 11.03 | Data Processing | 118 | 1.11 | 114 | 4 | 0 |
| 11.04 | Information Science/Studies | 14 | 0.13 | 0 | 14 | 0 |
| 11.05 | Computer Systems Analysis | 14 | 0.13 | 0 | 14 | 0 |
| 11.07 | Computer Science | 64 | 0.60 | 0 | 46 | 18 |
| 11.08 | Computer Software and Media Applications | 22 | 0.21 | 22 | 0 | 0 |
| 11.09 | Computer Systems Networking and Telecommunications | 20 | 0.19 | 20 | 0 | 0 |
| 11.10 | Computer/Information Technology Administration and Mgmt | 7 | 0.07 | 7 | 0 | 0 |
| 11.99 | Computer and Info. Sciences and Support Svcs., Other | 8 | 0.08 | 7 | 1 | 0 |

POSTSECONDARY PROGRAM COMPLETIONS

| CIP Code | CIP Title | TOTAL, ALL | PCT OF ALL | LESS | | HIGHER |
|-----------|--|---------------------|---------------------|------------|------------|------------|
| | | PROGRAM COMPLETIONS | PROGRAM COMPLETIONS | THAN BD | BD | THAN BD |
| 12 | Personal and Culinary Services | 6 | 0.06 | 6 | 0 | 0 |
| 12.05 | Culinary Arts and Related Services | 6 | 0.06 | 6 | 0 | 0 |
| 13 | Education | 1,019 | 9.57 | 21 | 660 | 338 |
| 13.01 | Education, General | 53 | 0.50 | 0 | 0 | 53 |
| 13.04 | Educational Administration and Supervision | 80 | 0.75 | 0 | 0 | 80 |
| 13.05 | Educational/Instructional Media Design | 5 | 0.05 | 0 | 0 | 5 |
| 13.06 | Educational Assessment, Evaluation, and Research | 3 | 0.03 | 0 | 0 | 3 |
| 13.10 | Special Education and Teaching | 101 | 0.95 | 0 | 23 | 78 |
| 13.11 | Student Counseling and Personnel Services | 32 | 0.30 | 0 | 0 | 32 |
| 13.12 | Teacher Edu. and Professional Development, Specific Level | 406 | 3.81 | 17 | 323 | 66 |
| 13.13 | Teacher Edu. and Professional Development, Specific Subject | 331 | 3.11 | 0 | 310 | 21 |
| 13.15 | Teaching Assistants/Aides | 4 | 0.04 | 4 | 0 | 0 |
| 13.99 | Education, Other | 4 | 0.04 | 0 | 4 | 0 |
| 14 | Engineering | 463 | 4.35 | 8 | 386 | 69 |
| 14.03 | Agricultural Engineering | 15 | 0.14 | 0 | 13 | 2 |
| 14.07 | Chemical Engineering | 22 | 0.21 | 0 | 16 | 6 |
| 14.08 | Civil Engineering | 98 | 0.92 | 0 | 86 | 12 |
| 14.09 | Computer Engineering | 23 | 0.22 | 0 | 17 | 6 |
| 14.10 | Electrical, Electronics and Communications Engineering | 108 | 1.01 | 0 | 95 | 13 |
| 14.14 | Environmental/Environmental Health Engineering | 12 | 0.11 | 0 | 3 | 9 |
| 14.18 | Materials Engineering | 2 | 0.02 | 0 | 0 | 2 |
| 14.19 | Mechanical Engineering | 137 | 1.29 | 0 | 123 | 14 |
| 14.33 | Construction Engineering | 8 | 0.08 | 0 | 8 | 0 |
| 14.35 | Industrial Engineering | 23 | 0.22 | 0 | 21 | 2 |
| 14.36 | Manufacturing Engineering | 5 | 0.05 | 0 | 3 | 2 |
| 14.39 | Geological/Geophysical Engineering | 1 | 0.01 | 0 | 1 | 0 |
| 14.99 | Engineering, Other | 9 | 0.08 | 8 | 0 | 1 |
| 15 | Engineering Technologies and Engineering-Related Fields | 399 | 3.75 | 374 | 19 | 6 |
| 15.01 | Architectural Engineering Technologies/Technicians | 22 | 0.21 | 22 | 0 | 0 |
| 15.02 | Civil Engineering Technologies/Technicians | 7 | 0.07 | 7 | 0 | 0 |
| 15.03 | Electrical Engineering Technologies/Technicians | 171 | 1.61 | 171 | 0 | 0 |
| 15.05 | Environmental Control Technologies/Technicians | 13 | 0.12 | 13 | 0 | 0 |
| 15.06 | Industrial Production Technologies/Technicians | 172 | 1.61 | 149 | 17 | 6 |
| 15.07 | Quality Control and Safety Technologies/Technicians | 2 | 0.02 | 0 | 2 | 0 |
| 15.10 | Construction Engineering Technologies | 4 | 0.04 | 4 | 0 | 0 |
| 15.14 | Nuclear Engineering Technologies/Technicians | 6 | 0.06 | 6 | 0 | 0 |
| 15.16 | Nanotechnology | 2 | 0.02 | 2 | 0 | 0 |
| 16 | Foreign Languages, Literatures, and Linguistics | 60 | 0.56 | 8 | 44 | 8 |
| 16.01 | Linguistic, Comparative, and Related Language Studies | 16 | 0.15 | 8 | 0 | 8 |
| 16.05 | Germanic Languages, Literatures, and Linguistics | 14 | 0.13 | 0 | 14 | 0 |
| 16.09 | Romance Languages, Literatures, and Linguistics | 28 | 0.26 | 0 | 28 | 0 |
| 16.12 | Classics/Classical Languages, Literatures, and Linguistics | 2 | 0.02 | 0 | 2 | 0 |
| 19 | Family and Consumer Sciences/Human Sciences | 163 | 1.53 | 7 | 112 | 44 |
| 19.05 | Foods, Nutrition, and Related Services | 32 | 0.30 | 0 | 0 | 32 |
| 19.06 | Housing and Human Environments | 1 | 0.01 | 0 | 1 | 0 |
| 19.07 | Human Development, Family Studies, and Related Services | 101 | 0.95 | 7 | 83 | 11 |
| 19.09 | Apparel and Textiles | 29 | 0.27 | 0 | 28 | 1 |
| 22 | Legal Professions and Studies | 93 | 0.87 | 13 | 0 | 80 |
| 22.01 | Law | 80 | 0.75 | 0 | 0 | 80 |
| 22.03 | Legal Support Services | 8 | 0.08 | 8 | 0 | 0 |
| 22.99 | Legal Professions and Studies, Other | 5 | 0.05 | 5 | 0 | 0 |
| 23 | English Language and Literature/Letters | 103 | 0.97 | 0 | 79 | 24 |
| 23.01 | English Language and Literature, General | 91 | 0.85 | 0 | 72 | 19 |
| 23.13 | Rhetoric and Composition/Writing Studies | 12 | 0.11 | 0 | 7 | 5 |
| 24 | Liberal Arts and Sciences, General Studies and Humanities | 1,078 | 10.12 | 849 | 229 | 0 |
| 24.01 | Liberal Arts and Sciences, General Studies and Humanities | 1,078 | 10.12 | 849 | 229 | 0 |
| 26 | Biological and Biomedical Sciences | 300 | 2.82 | 6 | 248 | 46 |
| 26.01 | Biology, General | 137 | 1.29 | 0 | 134 | 3 |
| 26.02 | Biochemistry, Biophysics and Molecular Biology | 9 | 0.08 | 0 | 7 | 2 |
| 26.03 | Botany/Plant Biology | 8 | 0.08 | 0 | 0 | 8 |
| 26.04 | Cell/Cellular Biology and Anatomical Sciences | 5 | 0.05 | 0 | 0 | 5 |
| 26.05 | Microbiological Sciences and Immunology | 25 | 0.23 | 0 | 16 | 9 |
| 26.07 | Zoology/Animal Biology | 71 | 0.67 | 0 | 65 | 6 |
| 26.08 | Genetics | 3 | 0.03 | 0 | 0 | 3 |
| 26.10 | Pharmacology and Toxicology | 3 | 0.03 | 0 | 0 | 3 |
| 26.12 | Biotechnology | 26 | 0.24 | 0 | 26 | 0 |
| 26.13 | Ecology, Evolution, Systematics, and Population Biology | 7 | 0.07 | 0 | 0 | 7 |
| 26.99 | Biological and Biomedical Sciences, Other | 6 | 0.06 | 6 | 0 | 0 |

POSTSECONDARY PROGRAM COMPLETIONS

| CIP Code | CIP Title | TOTAL, ALL PROGRAM COMPLETIONS | PCT OF ALL PROGRAM COMPLETIONS | LESS THAN BD | BD | HIGHER THAN BD |
|-----------|---|--------------------------------|--------------------------------|--------------|------------|----------------|
| 27 | Mathematics and Statistics | 68 | 0.64 | 0 | 52 | 16 |
| 27.01 | Mathematics | 53 | 0.50 | 0 | 44 | 9 |
| 27.03 | Applied Mathematics | 1 | 0.01 | 0 | 1 | 0 |
| 27.05 | Statistics | 14 | 0.13 | 0 | 7 | 7 |
| 30 | Multi/Interdisciplinary Studies | 62 | 0.58 | 11 | 50 | 1 |
| 30.11 | Gerontology | 1 | 0.01 | 0 | 0 | 1 |
| 30.20 | International/Global Studies | 13 | 0.12 | 0 | 13 | 0 |
| 30.99 | Multi/Interdisciplinary Studies, Other | 48 | 0.45 | 11 | 37 | 0 |
| 31 | Parks, Recreation, Leisure, and Fitness Studies | 134 | 1.26 | 0 | 128 | 6 |
| 31.01 | Parks, Recreation and Leisure Studies | 20 | 0.19 | 0 | 20 | 0 |
| 31.03 | Parks, Recreation and Leisure Facilities Management | 12 | 0.11 | 0 | 12 | 0 |
| 31.05 | Health and Physical Education/Fitness | 102 | 0.96 | 0 | 96 | 6 |
| 38 | Philosophy and Religious Studies | 21 | 0.20 | 0 | 21 | 0 |
| 38.01 | Philosophy | 15 | 0.14 | 0 | 15 | 0 |
| 38.02 | Religion/Religious Studies | 5 | 0.05 | 0 | 5 | 0 |
| 38.99 | Philosophy and Religious Studies, Other | 1 | 0.01 | 0 | 1 | 0 |
| 39 | Theology and Religious Vocations | 31 | 0.29 | 2 | 29 | 0 |
| 39.02 | Bible/Biblical Studies | 14 | 0.13 | 0 | 14 | 0 |
| 39.03 | Missions/Missionary Studies and Missiology | 5 | 0.05 | 0 | 5 | 0 |
| 39.06 | Theological and Ministerial Studies | 10 | 0.09 | 0 | 10 | 0 |
| 39.99 | Theology and Religious Vocations, Other | 2 | 0.02 | 2 | 0 | 0 |
| 40 | Physical Sciences | 79 | 0.74 | 0 | 53 | 26 |
| 40.04 | Atmospheric Sciences and Meteorology | 13 | 0.12 | 0 | 9 | 4 |
| 40.05 | Chemistry | 48 | 0.45 | 0 | 31 | 17 |
| 40.06 | Geological and Earth Sciences/Geosciences | 10 | 0.09 | 0 | 8 | 2 |
| 40.08 | Physics | 8 | 0.08 | 0 | 5 | 3 |
| 42 | Psychology | 215 | 2.02 | 0 | 178 | 37 |
| 42.01 | Psychology, General | 194 | 1.82 | 0 | 172 | 22 |
| 42.27 | Research and Experimental Psychology | 1 | 0.01 | 0 | 1 | 0 |
| 42.28 | Clinical, Counseling and Applied Psychology | 20 | 0.19 | 0 | 5 | 15 |
| 43 | Homeland Security and Protective Services | 277 | 2.60 | 73 | 198 | 6 |
| 43.01 | Criminal Justice and Corrections | 269 | 2.53 | 73 | 191 | 5 |
| 43.99 | Homeland Security and Protective Services, Other | 8 | 0.08 | 0 | 7 | 1 |
| 44 | Public Administration and Social Service Professions | 161 | 1.51 | 13 | 91 | 57 |
| 44.04 | Public Administration | 16 | 0.15 | 4 | 5 | 7 |
| 44.07 | Social Work | 145 | 1.36 | 9 | 86 | 50 |
| 45 | Social Sciences | 234 | 2.20 | 1 | 215 | 18 |
| 45.01 | Social Sciences, General | 34 | 0.32 | 0 | 33 | 1 |
| 45.02 | Anthropology | 15 | 0.14 | 0 | 15 | 0 |
| 45.06 | Economics | 20 | 0.19 | 0 | 19 | 1 |
| 45.07 | Geography and Cartography | 24 | 0.23 | 1 | 12 | 11 |
| 45.10 | Political Science and Government | 76 | 0.71 | 0 | 76 | 0 |
| 45.11 | Sociology | 63 | 0.59 | 0 | 58 | 5 |
| 45.99 | Social Sciences, Other | 2 | 0.02 | 0 | 2 | 0 |
| 46 | Construction Trades | 106 | 1.00 | 106 | 0 | 0 |
| 46.02 | Carpenters | 50 | 0.47 | 50 | 0 | 0 |
| 46.03 | Electrical and Power Transmission Installers | 39 | 0.37 | 39 | 0 | 0 |
| 46.04 | Building/Construction Finishing, Management, and Inspection | 10 | 0.09 | 10 | 0 | 0 |
| 46.05 | Plumbing and Related Water Supply Services | 6 | 0.06 | 6 | 0 | 0 |
| 46.99 | Construction Trades, Other | 1 | 0.01 | 1 | 0 | 0 |
| 47 | Mechanic and Repair Technologies/Technicians | 197 | 1.85 | 197 | 0 | 0 |
| 47.02 | Heating, Air Conditioning, Ventilation and Refrigeration | 16 | 0.15 | 16 | 0 | 0 |
| 47.03 | Heavy/Industrial Equipment Maintenance Technologies | 15 | 0.14 | 15 | 0 | 0 |
| 47.06 | Vehicle Maintenance and Repair Technologies | 166 | 1.56 | 166 | 0 | 0 |
| 48 | Precision Production | 90 | 0.84 | 90 | 0 | 0 |
| 48.05 | Precision Metal Working | 90 | 0.84 | 90 | 0 | 0 |
| 49 | Transportation and Materials Moving | 320 | 3.00 | 0 | 299 | 21 |
| 49.01 | Air Transportation | 320 | 3.00 | 0 | 299 | 21 |
| 50 | Visual and Performing Arts | 115 | 1.08 | 18 | 85 | 12 |
| 50.04 | Design and Applied Arts | 32 | 0.30 | 14 | 18 | 0 |
| 50.05 | Drama/Theatre Arts and Stagecraft | 15 | 0.14 | 0 | 15 | 0 |
| 50.07 | Fine and Studio Arts | 45 | 0.42 | 0 | 37 | 8 |
| 50.09 | Music | 18 | 0.17 | 0 | 14 | 4 |
| 50.10 | Arts, Entertainment, and Media Management | 5 | 0.05 | 4 | 1 | 0 |
| 51 | Health Professions and Related Programs | 1,789 | 16.79 | 565 | 748 | 476 |
| 51.02 | Communication Disorders Sciences and Services | 84 | 0.79 | 10 | 33 | 41 |
| 51.06 | Dental Support Services and Allied Professions | 41 | 0.38 | 41 | 0 | 0 |
| 51.07 | Health and Medical Administrative Services | 99 | 0.93 | 73 | 0 | 26 |

POSTSECONDARY PROGRAM COMPLETIONS

| CIP Code | CIP Title | TOTAL, ALL PROGRAM COMPLETIONS | PCT OF ALL PROGRAM COMPLETIONS | LESS THAN BD | BD | HIGHER THAN BD |
|-----------|--|--------------------------------|--------------------------------|--------------|--------------|----------------|
| 51.08 | Allied Health and Medical Assisting Services | 66 | 0.62 | 39 | 27 | 0 |
| 51.09 | Allied Health Diagnostic, Intervention, and Treatment | 160 | 1.50 | 63 | 95 | 2 |
| 51.10 | Clinical/Medical Laboratory Science and Allied Professions | 136 | 1.28 | 55 | 64 | 17 |
| 51.11 | Health/Medical Preparatory Programs | 5 | 0.05 | 0 | 5 | 0 |
| 51.12 | Medicine | 59 | 0.55 | 0 | 0 | 59 |
| 51.15 | Mental and Social Health Services and Allied Professions | 23 | 0.22 | 11 | 6 | 6 |
| 51.20 | Pharmacy, Pharmaceutical Sciences, and Administration | 175 | 1.64 | 0 | 84 | 91 |
| 51.22 | Public Health | 2 | 0.02 | 0 | 2 | 0 |
| 51.23 | Rehabilitation and Therapeutic Professions | 153 | 1.44 | 0 | 10 | 143 |
| 51.31 | Dietetics and Clinical Nutrition Services | 43 | 0.40 | 3 | 40 | 0 |
| 51.35 | Somatic Bodywork and Related Therapeutic Services | 12 | 0.11 | 12 | 0 | 0 |
| 51.38 | R.N., Nursing Admin., Nursing Research and Clinical Nursing | 566 | 5.31 | 93 | 382 | 91 |
| 51.39 | Practical Nursing, Vocational Nursing and Nursing Assistants | 165 | 1.55 | 165 | 0 | 0 |
| 52 | Business, Mgmt, Marketing, and Related Support Services | 1,988 | 18.66 | 245 | 1,359 | 384 |
| 52.01 | Business/Commerce, General | 28 | 0.26 | 17 | 11 | 0 |
| 52.02 | Business Administration, Management and Operations | 1,105 | 10.37 | 41 | 704 | 360 |
| 52.03 | Accounting and Related Services | 265 | 2.49 | 29 | 227 | 9 |
| 52.04 | Business Operations Support and Assistant Services | 79 | 0.74 | 79 | 0 | 0 |
| 52.05 | Business/Corporate Communications | 13 | 0.12 | 0 | 13 | 0 |
| 52.06 | Business/Managerial Economics | 5 | 0.05 | 0 | 5 | 0 |
| 52.07 | Entrepreneurial and Small Business Operations | 64 | 0.60 | 27 | 37 | 0 |
| 52.08 | Finance and Financial Management Services | 86 | 0.81 | 0 | 85 | 1 |
| 52.09 | Hospitality Administration/Management | 29 | 0.27 | 4 | 25 | 0 |
| 52.10 | Human Resources Management and Services | 54 | 0.51 | 30 | 24 | 0 |
| 52.11 | International Business | 21 | 0.20 | 0 | 21 | 0 |
| 52.12 | Management Information Systems and Services | 62 | 0.58 | 6 | 44 | 12 |
| 52.14 | Marketing | 129 | 1.21 | 9 | 120 | 0 |
| 52.18 | General Sales, Merchandising and Related Marketing Ops. | 3 | 0.03 | 3 | 0 | 0 |
| 52.20 | Construction Management | 45 | 0.42 | 0 | 43 | 2 |
| 54 | History | 63 | 0.59 | 0 | 55 | 8 |
| 54.01 | History | 63 | 0.59 | 0 | 55 | 8 |

Chief Executives

11-1011 | Business Management, Administration & Finance | Enterprising | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Board Member; Chief Operating Officer; President

Occupational Description

Determine and formulate policies and provide the overall direction of companies or private and public sector organizations within the guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Direct and coordinate an organization's financial and budget activities to fund operations, maximize investments, and increase efficiency.

Confer with board members, organization officials, and staff members to discuss issues, coordinate activities, and resolve problems.

Analyze operations to evaluate performance of a company and its staff in meeting objectives, and to determine areas of potential cost reduction, program improvement, or policy change.

Direct, plan, and implement policies, objectives, and activities of organizations or businesses to ensure continuing operations, to maximize returns on investments, and to increase productivity.

Prepare budgets for approval, including those for funding and implementation of programs.

Top Work Activities

Making Decisions and Solving Problems

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Complex Problem Solving

Judgment and Decision Making

Reading Comprehension

Top Knowledge

Administration and Management

Economics and Accounting

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|------------------|-------------|
| 1,034 | 1,063 | 2.80 | 29 | 291 | 320 | \$57,003 | \$136,375 | \$176,060 |

General and Operations Managers

11-1021 | Business Management, Administration & Finance | Enterprising | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Industrial Organization Manager; District Manager; Department Store General Manager

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Oversee activities directly related to making products or providing services.

Direct and coordinate activities of businesses or departments concerned with the production, pricing, sales, or distribution of products.

Review financial statements, sales and activity reports, and other performance data to measure productivity and goal achievement and to determine areas needing cost reduction and program improvement.

Manage staff, preparing work schedules and assigning specific duties.

Direct and coordinate organization's financial and budget activities to fund operations, maximize investments, and increase efficiency.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Scheduling Work and Activities

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Administration and Management

Personnel and Human Resources

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 3,907 | 4,005 | 2.51 | 98 | 1,132 | 1,230 | \$53,503 | \$96,674 | \$118,259 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Advertising and Promotions Managers

11-2011 | Marketing, Sales, Service & Tourism

Enterprising

Declining Growth

HIGH SKILL

Alternate Job Title(s): Campaign Director; Circulation Director; Media Director

Occupational Description

Plan and direct advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or give-aways, to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect layouts and advertising copy and edit scripts, audio and video tapes, and other promotional material for adherence to specifications.

Plan and prepare advertising and promotional material to increase sales of products or services, working with customers, company officials, sales departments and advertising agencies.

Gather and organize information to plan advertising campaigns.

Confer with clients to provide marketing or technical advice.

Direct, motivate, and monitor the mobilization of a campaign team to advance campaign goals.

Top Work Activities

Communicating with Persons Outside Organization

Thinking Creatively

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

English Language

Communications and Media

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|-------|----------------|-------------|
| 125 | 116 | -7.20 | 0 | 29 | 29 | N/A | N/A | N/A |

Marketing Managers

11-2021 | Marketing, Sales, Service & Tourism

Enterprising

Exceptional Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Fashion Coordinator; Marketing Director

Occupational Description

Determine the demand for products and services offered by a firm and its competitors and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Formulate, direct and coordinate marketing activities and policies to promote products and services, working with advertising and promotion managers.

Identify, develop, and evaluate marketing strategy, based on knowledge of establishment objectives, market characteristics, and cost and markup factors.

Direct the hiring, training, and performance evaluations of marketing and sales staff and oversee their daily activities.

Evaluate the financial aspects of product development, such as budgets, expenditures, research and development appropriations, and return-on-investment and profit-loss projections.

Develop pricing strategies, balancing firm objectives and customer satisfaction.

Top Work Activities

Communicating with Persons Outside Organization

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Active Listening

Critical Thinking

Speaking

Top Knowledge

Sales and Marketing

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 283 | 336 | 18.73 | 53 | 61 | 114 | \$45,967 | \$81,096 | \$98,661 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Sales Managers

11-2022 | Marketing, Sales, Service & Tourism | Enterprising | Exceptional Growth

HIGH DEMAND **HIGH WAGE** **HIGH SKILL**

Alternate Job Title(s): Director of Sales; Export Manager; Regional Sales Manager

Occupational Description

Direct the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Resolve customer complaints regarding sales and service.
- Oversee regional and local sales managers and their staffs.
- Plan and direct staffing, training, and performance evaluations to develop and control sales and service programs.
- Determine price schedules and discount rates.
- Review operational records and reports to project sales and determine profitability.

Top Work Activities

- Selling or Influencing Others
- Establishing and Maintaining Interpersonal Relationships
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Speaking
- Active Listening
- Social Perceptiveness

Top Knowledge

- Sales and Marketing
- Customer and Personal Service
- Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 831 | 998 | 20.10 | 167 | 179 | 346 | \$47,902 | \$83,113 | \$100,719 |

Public Relations Managers

11-2031 | Business Management, Administration & Finance | Enterprising | Avg to Above Avg Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Fundraising Director; Public Information Director; Publicity Director

Occupational Description

Plan and direct public relations programs designed to create and maintain a favorable public image for employer or client; or if engaged in fundraising, plan and direct activities to solicit and maintain funds for special projects and nonprofit organizations.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Establish and maintain effective working relationships with clients, government officials, and media representatives and use these relationships to develop new business opportunities.
- Write interesting and effective press releases, prepare information for media kits and develop and maintain company internet or intranet web pages.
- Identify main client groups and audiences, determine the best way to communicate publicity information to them, and develop and implement a communication plan.
- Assign, supervise and review the activities of public relations staff.
- Develop and maintain the company's corporate image and identity, which includes the use of logos and signage.

Top Work Activities

- Communicating with Persons Outside Organization
- Establishing and Maintaining Interpersonal Relationships
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Speaking
- Active Listening
- Reading Comprehension

Top Knowledge

- English Language
- Customer and Personal Service
- Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 154 | 171 | 11.04 | 17 | 36 | 53 | \$40,485 | \$69,296 | \$83,702 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Administrative Services Managers

11-3011 | Business Management, Administration & Finance | Enterprising | Avg to Above Avg Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Facilities Manager; Space Officer

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Direct or coordinate the supportive services department of a business, agency, or organization.

Prepare and review operational reports and schedules to ensure accuracy and efficiency.

Set goals and deadlines for the department.

Acquire, distribute and store supplies.

Analyze internal processes and recommend and implement procedural or policy changes to improve operations, such as supply changes or the disposal of records.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Interacting with Computers

Getting Information

Top Skills

Speaking

Active Listening

Coordination

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 455 | 497 | 9.23 | 42 | 95 | 137 | \$39,688 | \$64,025 | \$76,194 |

Computer and Information Systems Managers

11-3021 | Information Technology | Enterprising | Exceptional Growth

HIGH DEMAND **HIGH WAGE** **HIGH SKILL**

Alternate Job Title(s): Data Processing Manager; Computer Programming Manager; Data Systems Manager

Occupational Description

Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming. Exclude "Computer Specialists" (15-1011 through 15-1099).

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Review project plans to plan and coordinate project activity.

Manage backup, security and user help systems.

Develop and interpret organizational goals, policies, and procedures.

Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.

Consult with users, management, vendors, and technicians to assess computing needs and system requirements.

Top Work Activities

Interacting with Computers

Getting Information

Establishing and Maintaining Interpersonal Relationships

Top Skills

Reading Comprehension

Active Listening

Critical Thinking

Top Knowledge

Computers and Electronics

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 487 | 581 | 19.30 | 94 | 79 | 173 | \$53,696 | \$79,999 | \$93,151 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Financial Managers

11-3031 | Business Management, Administration & Finance | Enterprising | Avg to Above Avg Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Bank Director; Comptroller; Budget Director

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Establish and maintain relationships with individual or business customers or provide assistance with problems these customers may encounter.

Examine, evaluate, or process loan applications.

Plan, direct, or coordinate the activities of workers in branches, offices, or departments of establishments, such as branch banks, brokerage firms, risk and insurance departments, or credit departments.

Oversee the flow of cash or financial instruments.

Recruit staff members and oversee training programs.

Top Work Activities

Getting Information

Selling or Influencing Others

Interacting with Computers

Top Skills

Active Listening

Speaking

Writing

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 1,293 | 1,434 | 10.90 | 141 | 233 | 374 | \$53,261 | \$86,063 | \$102,464 |

Compensation and Benefits Managers

11-3041 | Business Management, Administration & Finance | Enterprising | Very High Growth | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Employee Benefits Director; Job Analysis Manager; Wage and Salary Administrator

Occupational Description

Plan, direct, or coordinate compensation and benefits activities and staff of an organization. Include job analysis and position description managers.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Design, evaluate and modify benefits policies to ensure that programs are current, competitive and in compliance with legal requirements.

Analyze compensation policies, government regulations, and prevailing wage rates to develop competitive compensation plan.

Fulfill all reporting requirements of all relevant government rules and regulations, including the Employee Retirement Income Security Act (ERISA).

Direct preparation and distribution of written and verbal information to inform employees of benefits, compensation, and personnel policies.

Administer, direct, and review employee benefit programs, including the integration of benefit programs following mergers and acquisitions.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Analyzing Data or Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Personnel and Human Resources

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 154 | 180 | 16.88 | 26 | 33 | 59 | \$39,127 | \$75,036 | \$92,990 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Training and Development Managers

11-3042 | Business Management, Administration & Finance | Enterprising | Very High Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Efficiency Manager; Education and Training Manager; Training Director

Occupational Description

Plan, direct, or coordinate the training and development activities and staff of an organization.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare training budget for department or organization.

Evaluate instructor performance and the effectiveness of training programs, providing recommendations for improvement.

Analyze training needs to develop new training programs or modify and improve existing programs.

Conduct or arrange for ongoing technical training and personal development classes for staff members.

Plan, develop, and provide training and staff development programs, using knowledge of the effectiveness of methods such as classroom training, demonstrations, on-the-job training, meetings, conferences, and workshops.

Top Work Activities

Training and Teaching Others

Communicating with Supervisors, Peers, or Subordinates

Organizing, Planning, and Prioritizing Work

Top Skills

Speaking

Learning Strategies

Instructing

Top Knowledge

Education and Training

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 71 | 82 | 15.49 | 11 | 15 | 26 | \$54,855 | \$84,480 | \$99,293 |

Industrial Production Managers

11-3051 | Manufacturing | Enterprising | Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Factory Superintendent; Plant Manager; Quality Control Manager

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Direct and coordinate production, processing, distribution, and marketing activities of industrial organization.

Review processing schedules and production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.

Review operations and confer with technical or administrative staff to resolve production or processing problems.

Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems.

Hire, train, evaluate, and discharge staff, and resolve personnel grievances.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Coordinating the Work and Activities of Others

Top Skills

Critical Thinking

Monitoring

Coordination

Top Knowledge

Production and Processing

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 298 | 302 | 1.34 | 4 | 104 | 108 | \$47,646 | \$70,481 | \$81,898 |

Purchasing Managers

11-3061 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth |

HIGH WAGE | **HIGH SKILL**

Alternate Job Title(s): Director of Purchasing; Merchandise Manager; Procurement Manager

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Represent companies in negotiating contracts and formulating policies with suppliers.
- Direct and coordinate activities of personnel engaged in buying, selling, and distributing materials, equipment, machinery, and supplies.
- Interview and hire staff, and oversee staff training.
- Locate vendors of materials, equipment or supplies, and interview them to determine product availability and terms of sales.
- Prepare and process requisitions and purchase orders for supplies and equipment.

Top Work Activities

- Resolving Conflicts and Negotiating with Others
- Communicating with Supervisors, Peers, or Subordinates
- Communicating with Persons Outside Organization

Top Skills

- Coordination
- Active Listening
- Speaking

Top Knowledge

- Administration and Management
- English Language
- Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 108 | 119 | 10.19 | 11 | 31 | 42 | \$55,010 | \$81,939 | \$95,403 |

Farmers and Ranchers

11-9012 | Natural Resources & Mining | Realistic | Declining Growth |

MEDIUM SKILL

Alternate Job Title(s): Beekeeper; Dairy Farmer; Tobacco Grower

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Perform crop production duties such as planning, tilling, planting, fertilizing, cultivating, spraying, and harvesting.
- Plan crop activities based on factors such as crop maturity and weather conditions.
- Monitor crops as they grow in order to ensure that they are growing properly and are free from diseases and contaminants.
- Maintain facilities such as fencing, water supplies, and outdoor housing and wind shelters.
- Determine types and quantities of crops or livestock to be raised, according to factors such as market conditions, federal program availability, and soil conditions.

Top Work Activities

- Controlling Machines and Processes
- Operating Vehicles, Mechanized Devices, or Equipment
- Monitor Processes, Materials, or Surroundings

Top Skills

- Operation and Control
- Operation Monitoring
- Judgment and Decision Making

Top Knowledge

- Food Production
- Mechanical
- Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|-------|----------------|-------------|
| 26,895 | 25,756 | -4.24 | 0 | 1,644 | 1,644 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Construction Managers

11-9021 | Architecture & Construction

Enterprising | High Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Masonry Contractor Administrator; Developer; General Contractor

Occupational Description

Plan, direct, coordinate, or budget, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, and implementation. Include specialized construction fields, such as carpentry or plumbing. Include general superintendents, project managers, and constructors who manage, coordinate, and supervise the construction process.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Schedule the project in logical steps and budget time required to meet deadlines.

Confer with supervisory personnel, owners, contractors, and design professionals to discuss and resolve matters such as work procedures, complaints, and construction problems.

Prepare contracts and negotiate revisions, changes and additions to contractual agreements with architects, consultants, clients, suppliers and subcontractors.

Prepare and submit budget estimates and progress and cost tracking reports.

Interpret and explain plans and contract terms to administrative staff, workers, and clients, representing the owner or developer.

Top Work Activities

Making Decisions and Solving Problems

Scheduling Work and Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Time Management

Active Listening

Speaking

Top Knowledge

Building and Construction

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,016 | 1,150 | 13.19 | 134 | 79 | 213 | \$47,244 | \$81,579 | \$98,747 |

Education Administrators, Preschool and Child Care Center/Program

11-9031 | Education & Training

Social | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Director of Child Care Center; Head Start Director

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor students' progress, and provide students and teachers with assistance in resolving any problems.

Confer with parents and staff to discuss educational activities and policies, and students' behavioral or learning problems.

Set educational standards and goals, and help establish policies, procedures, and programs to carry them out.

Plan, direct, and monitor instructional methods and content of educational, vocational, or student activity programs.

Direct and coordinate activities of teachers or administrators at daycare centers, schools, public agencies, or institutions.

Top Work Activities

Performing Administrative Activities

Making Decisions and Solving Problems

Assisting and Caring for Others

Top Skills

Active Listening

Speaking

Monitoring

Top Knowledge

Administration and Management

Education and Training

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 53 | 56 | 5.66 | 3 | 16 | 19 | \$26,909 | \$35,159 | \$39,284 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Education Administrators, Elementary and Secondary School

11-9032 | Education & Training | Enterprising | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Director of Physical Education; Curriculum Director; School Principal

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with parents and staff to discuss educational activities, policies, and student behavioral or learning problems.

Enforce discipline and attendance rules.

Observe teaching methods and examine learning materials to evaluate and standardize curricula and teaching techniques, and to determine areas where improvement is needed.

Collaborate with teachers to develop and maintain curriculum standards, develop mission statements, and set performance goals and objectives.

Recruit, hire, train, and evaluate primary and supplemental staff.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Establishing and Maintaining Interpersonal Relationships

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

English Language

Education and Training

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 539 | 548 | 1.67 | 9 | 161 | 170 | \$52,879 | \$70,961 | \$80,003 |

Education Administrators, Postsecondary

11-9033 | Education & Training | Enterprising | Below Average Growth | **ADVANCED SKILL**

Alternate Job Title(s): Director of Student Affairs; Dean; Registrar

Occupational Description

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.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Advise students on issues such as course selection, progress toward graduation, and career decisions.

Direct, coordinate, and evaluate the activities of personnel, including support staff, engaged in administering academic institutions, departments or alumni organizations.

Recruit, hire, train, and terminate departmental personnel.

Participate in student recruitment, selection, and admission, making admissions recommendations when required to do so.

Formulate strategic plans for the institution.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Establishing and Maintaining Interpersonal Relationships

Making Decisions and Solving Problems

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|-------|----------------|-------------|
| 117 | 123 | 5.13 | 6 | 35 | 41 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Engineering Managers

11-9041 | Science, Engineering & Mathematics

Enterprising

High Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Engineering Research Manager; Safety Director; Technical Director

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Coordinate and direct projects, making detailed plans to accomplish goals and directing the integration of technical activities.

Consult or negotiate with clients to prepare project specifications.

Present and explain proposals, reports, and findings to clients.

Direct, review, and approve product design and changes.

Recruit employees, assign, direct, and evaluate their work, and oversee the development and maintenance of staff competence.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Engineering and Technology

Design

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 315 | 356 | 13.02 | 41 | 64 | 105 | \$64,046 | \$94,342 | \$109,490 |

Food Service Managers

11-9051 | Marketing, Sales, Service & Tourism

Enterprising

Below Average Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Banquet Director; Restaurant Manager; Catering Manager

Occupational Description

Plan, direct, or coordinate activities of an organization or department that serves food and beverages.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor compliance with health and fire regulations regarding food preparation and serving, and building maintenance in lodging and dining facilities.

Monitor food preparation methods, portion sizes, and garnishing and presentation of food to ensure that food is prepared and presented in an acceptable manner.

Count money and make bank deposits.

Investigate and resolve complaints regarding food quality, service, or accommodations.

Coordinate assignments of cooking personnel to ensure economical use of food and timely preparation.

Top Work Activities

Making Decisions and Solving Problems

Training and Teaching Others

Getting Information

Top Skills

Service Orientation

Speaking

Critical Thinking

Top Knowledge

Customer and Personal Service

Administration and Management

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 562 | 606 | 7.83 | 44 | 109 | 153 | \$29,635 | \$44,284 | \$51,608 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Funeral Directors

11-9061 | Marketing, Sales, Service & Tourism

Enterprising | Declining Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Mortician; Funeral Home Manager; Undertaker

Occupational Description

Perform various tasks to arrange and direct funeral services, such as coordinating transportation of body to mortuary for embalming, interviewing family or other authorized person to arrange details, selecting pallbearers, procuring official for religious rites, and providing transportation for mourners.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Obtain information needed to complete legal documents such as death certificates and burial permits.

Oversee the preparation and care of the remains of people who have died.

Consult with families or friends of the deceased to arrange funeral details such as obituary notice wording, casket selection, and plans for services.

Plan, schedule, and coordinate funerals, burials, and cremations, arranging details such as floral delivery and the time and place of services.

Perform embalming duties as necessary.

Top Work Activities

Getting Information

Assisting and Caring for Others

Performing for or Working Directly with the Public

Top Skills

Social Perceptiveness

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 101 | 100 | -0.99 | 0 | 20 | 20 | \$37,401 | \$61,993 | \$74,289 |

Lodging Managers

11-9081 | Marketing, Sales, Service & Tourism

Enterprising | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Director of Housing; Innkeeper; Hotel Manager

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect guest rooms, public areas, and grounds for cleanliness and appearance.

Greet and register guests.

Answer inquiries pertaining to hotel policies and services, and resolve occupants' complaints.

Monitor the revenue activity of the hotel or facility.

Train staff members.

Top Work Activities

Performing for or Working Directly with the Public

Interacting with Computers

Making Decisions and Solving Problems

Top Skills

Active Listening

Coordination

Speaking

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 191 | 201 | 5.24 | 10 | 41 | 51 | \$27,273 | \$38,274 | \$43,775 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Medical and Health Services Managers

11-9111 | Healthcare & Human Services

Enterprising

High Growth

HIGH DEMAND

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Director of Occupational Therapy; Medical Records Administrator; Public Health Administrator

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct and administer fiscal operations, including accounting, planning budgets, authorizing expenditures, establishing rates for services, and coordinating financial reporting.

Direct, supervise and evaluate work activities of medical, nursing, technical, clerical, service, maintenance, and other personnel.

Maintain communication between governing boards, medical staff, and department heads by attending board meetings and coordinating interdepartmental functioning.

Review and analyze facility activities and data to aid planning and cash and risk management and to improve service utilization.

Plan, implement and administer programs and services in a health care or medical facility, including personnel administration, training, and coordination of medical, nursing and physical plant staff.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Evaluating Information to Determine Compliance with Standards

Top Skills

Reading Comprehension

Speaking

Active Listening

Top Knowledge

Administration and Management

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 647 | 728 | 12.52 | 81 | 123 | 204 | \$47,071 | \$68,475 | \$79,177 |

Natural Sciences Managers

11-9121 | Science, Engineering & Mathematics

Enterprising

Declining Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Geophysical Manager; Research and Development Director; Wildlife Manager

Occupational Description

Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, mathematics, statistics, and research and development in these fields. Exclude "Engineering Managers" (11-9041) and "Computer and Information Systems Managers" (11-3021).

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with scientists, engineers, regulators, and others to plan and review projects and to provide technical assistance.

Develop client relationships and communicate with clients to explain proposals, present research findings, establish specifications or discuss project status.

Plan and direct research, development, and production activities.

Prepare project proposals.

Design and coordinate successive phases of problem analysis, solution proposals, and testing.

Top Work Activities

Analyzing Data or Information

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Speaking

Science

Critical Thinking

Top Knowledge

Chemistry

Law and Government

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 135 | 134 | -0.74 | 0 | 40 | 40 | \$64,843 | \$87,127 | \$98,268 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Postmasters and Mail Superintendents

11-9131 | Transportation, Distribution & Logistics | Enterprising | Declining Growth

HIGH WAGE **MEDIUM SKILL**

Alternate Job Title(s): N/A

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Organize and supervise activities such as the processing of incoming and outgoing mail.
- Direct and coordinate operational, management, and supportive services of one or a number of postal facilities.
- Resolve customer complaints.
- Hire and train employees, and evaluate their performance.
- Prepare employee work schedules.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Getting Information
- Making Decisions and Solving Problems

Top Skills

- Critical Thinking
- Active Listening
- Speaking

Top Knowledge

- Administration and Management
- Customer and Personal Service
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 311 | 280 | -9.97 | 0 | 63 | 63 | \$29,413 | \$45,734 | \$53,894 |

Property, Real Estate, and Community Association Managers

11-9141 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth

HIGH WAGE **MEDIUM SKILL**

Alternate Job Title(s): Condominium Association Manager; Trailer Park Manager

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Meet with prospective tenants to show properties, explain terms of occupancy, and provide information about local areas.
- Direct collection of monthly assessments, rental fees, and deposits and payment of insurance premiums, mortgage, taxes, and incurred operating expenses.
- Inspect grounds, facilities, and equipment routinely to determine necessity of repairs or maintenance.
- Investigate complaints, disturbances and violations and resolve problems following management rules and regulations.
- Plan, schedule, and coordinate general maintenance, major repairs, and remodeling or construction projects for commercial or residential properties.

Top Work Activities

- Getting Information
- Performing Administrative Activities
- Establishing and Maintaining Interpersonal Relationships

Top Skills

- Speaking
- Active Listening
- Negotiation

Top Knowledge

- Customer and Personal Service
- Administration and Management
- Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 435 | 474 | 8.97 | 39 | 75 | 114 | \$29,553 | \$46,577 | \$55,090 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Social and Community Service Managers

11-9151 | Healthcare & Human Services

Enterprising

Below Average Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Child Welfare Director; Youth Program Director; Director of Casework Services

Occupational Description

Plan, organize, or coordinate the activities of a social service program or community outreach organization. Oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits. Work may involve directing social workers, counselors, or probation officers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate the work of staff and volunteers to ensure that programs are of appropriate quality and that resources are used effectively.

Provide direct service and support to individuals or clients, such as handling a referral for child advocacy issues, conducting a needs evaluation, or resolving complaints.

Recruit, interview, and hire or sign up volunteers and staff.

Establish and maintain relationships with other agencies and organizations in community to meet community needs and to ensure that services are not duplicated.

Establish and oversee administrative procedures to meet objectives set by boards of directors or senior management.

Top Work Activities

Making Decisions and Solving Problems

Establishing and Maintaining Interpersonal Relationships

Assisting and Caring for Others

Top Skills

Active Listening

Speaking

Time Management

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 543 | 588 | 8.29 | 45 | 125 | 170 | \$32,945 | \$47,989 | \$55,511 |

Purchasing Agents and Buyers, Farm Products

13-1021 | Natural Resources & Mining

Enterprising

Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Cotton Broker; Livestock Buyer; Tobacco Buyer

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Purchase for further processing or for resale farm products such as milk, grains, and Christmas trees.

Negotiate contracts with farmers for the production or purchase of farm products.

Arrange for processing and/or resale of purchased products.

Arrange for transportation and/or storage of purchased products.

Review orders to determine product types and quantities required to meet demand.

Top Work Activities

Getting Information

Selling or Influencing Others

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Food Production

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 272 | 278 | 2.21 | 6 | 60 | 66 | \$41,514 | \$55,180 | \$62,012 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Wholesale and Retail Buyers, Except Farm Products

13-1022 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Importer; Merchandiser; Wholesale Jobber

Occupational Description

Buy merchandise or commodities, other than farm products, for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze past buying trends, sales records, price, and quality of merchandise to determine value and yield. Select, order, and authorize payment for merchandise according to contractual agreements. May conduct meetings with sales personnel and introduce new products. Include assistant buyers.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Use computers to organize and locate inventory, and operate spreadsheet and word processing software.

Negotiate prices, discount terms and transportation arrangements for merchandise.

Manage the department for which they buy.

Confer with sales and purchasing personnel to obtain information about customer needs and preferences.

Examine, select, order, and purchase at the most favorable price merchandise consistent with quality, quantity, specification requirements and other factors.

Top Work Activities

Getting Information

Establishing and Maintaining Interpersonal Relationships

Identifying Objects, Actions, and Events

Top Skills

Active Listening

Speaking

Persuasion

Top Knowledge

Customer and Personal Service

Administration and Management

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 325 | 343 | 5.54 | 18 | 81 | 99 | \$31,248 | \$44,571 | \$51,233 |

Purchasing Agents, Except Wholesale, Retail, and Farm Products

13-1023 | Manufacturing | Conventional | Very High Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Fuel Buyer; Lumber Buyer; Radio Time Buyer

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Purchase the highest quality merchandise at the lowest possible price and in correct amounts.

Prepare purchase orders, solicit bid proposals, and review requisitions for goods and services.

Research and evaluate suppliers based on price, quality, selection, service, support, availability, reliability, production and distribution capabilities, and the supplier's reputation and history.

Analyze price proposals, financial reports, and other data and information to determine reasonable prices.

Monitor and follow applicable laws and regulations.

Top Work Activities

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Speaking

Active Listening

Critical Thinking

Top Knowledge

Mathematics

Clerical

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 475 | 561 | 18.11 | 86 | 125 | 211 | \$36,816 | \$55,600 | \$64,992 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Claims Adjusters, Examiners, and Investigators

13-1031 | Business Management, Administration & Finance | Conventional | Very High Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Health Insurance Adjuster; Claims Agent

Occupational Description

Review settled claims to determine that payments and settlements have been made in accordance with company practices and procedures, ensuring that proper methods have been followed. Report overpayments, underpayments, and other irregularities. Confer with legal counsel on claims requiring litigation.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Examine claims forms and other records to determine insurance coverage.
- Investigate and assess damage to property and create or review property damage estimates.
- Interview or correspond with claimants, witnesses, police, physicians, or other relevant parties to determine claim settlement, denial, or review.
- Review police reports, medical treatment records, medical bills, or physical property damage to determine the extent of liability.
- Negotiate claim settlements and recommend litigation when settlement cannot be negotiated.

Top Work Activities

- Identifying Objects, Actions, and Events
- Interacting with Computers
- Getting Information

Top Skills

- Reading Comprehension
- Active Listening
- Critical Thinking

Top Knowledge

- English Language
- Customer and Personal Service
- Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 1,080 | 1,277 | 18.24 | 197 | 274 | 471 | \$35,247 | \$49,968 | \$57,329 |

Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation

13-1041 | Business Management, Administration & Finance | Enterprising | Exceptional Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Truant Officer; Coroner; Inspector of Weights and Measures

Occupational Description

Examine, evaluate, and investigate eligibility for or conformity with laws and regulations governing contract compliance of licenses and permits, and other compliance and enforcement inspection activities not classified elsewhere. Exclude "Tax Examiners, Collectors, and Revenue Agents" (13-2081) and "Financial Examiners" (13-2061).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Issue licenses to individuals meeting standards.
- Evaluate applications, records, and documents in order to gather information about eligibility or liability issues.
- Administer oral, written, road, or flight tests to license applicants.
- Score tests and observe equipment operation and control in order to rate ability of applicants.
- Advise licensees and other individuals or groups concerning licensing, permit, or passport regulations.

Top Work Activities

- Getting Information
- Performing for or Working Directly with the Public
- Interacting with Computers

Top Skills

- Speaking
- Active Listening
- Social Perceptiveness

Top Knowledge

- Customer and Personal Service
- Law and Government
- Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 924 | 1,137 | 23.05 | 213 | 98 | 311 | \$31,506 | \$48,940 | \$57,657 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cost Estimators

13-1051 | Architecture & Construction | Enterprising | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Construction Estimator; Crating and Moving Estimator; Job Estimator

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Consult with clients, vendors, personnel in other departments or construction foremen to discuss and formulate estimates and resolve issues.

Analyze blueprints and other documentation to prepare time, cost, materials, and labor estimates.

Prepare estimates for use in selecting vendors or subcontractors.

Confer with engineers, architects, owners, contractors and subcontractors on changes and adjustments to cost estimates.

Prepare estimates used by management for purposes such as planning, organizing, and scheduling work.

Top Work Activities

Getting Information

Interacting with Computers

Estimating the Quantifiable Characteristics of Products, Events, or Information

Top Skills

Mathematics

Speaking

Critical Thinking

Top Knowledge

Mathematics

Engineering and Technology

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 679 | 892 | 31.37 | 213 | 364 | \$31,644 | \$46,680 | \$54,198 |

Emergency Management Specialists

13-1061 | Law, Public Safety, Corrections & Security | Social | Exceptional Growth | **HIGH SKILL**

Alternate Job Title(s): Director of Civil Defense; Public Safety Director

Occupational Description

Coordinate disaster response or crisis management activities, provide disaster preparedness training, and prepare emergency plans and procedures for natural (e.g., hurricanes, floods, earthquakes), wartime, or technological (e.g., nuclear power plant emergencies, hazardous materials spills) disasters or hostage situations.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Develop and implement training procedures and strategies for radiological protection, detection, and decontamination.

Collaborate with other officials to prepare and analyze damage assessments following disasters or emergencies.

Keep informed of federal, state, and local regulations affecting emergency plans and ensure that plans adhere to these regulations.

Train local groups in the preparation of long-term plans that are compatible with federal and state plans.

Propose alteration of emergency response procedures based on regulatory changes, technological changes, or knowledge gained from outcomes of previous emergency situations.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Top Skills

Service Orientation

Speaking

Critical Thinking

Top Knowledge

Public Safety and Security

Law and Government

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 91 | 108 | 18.68 | 17 | 37 | \$28,640 | \$44,093 | \$51,820 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Employment, Recruitment, and Placement Specialists

13-1071 | Business Management, Administration & Finance | Enterprising | Exceptional Growth

HIGH DEMAND

HIGH SKILL

Alternate Job Title(s): Employment Interviewer; Personnel Recruiter; Placement Assistant

Occupational Description
Recruit and place workers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inform applicants of job openings and details such as duties and responsibilities, compensation, benefits, schedules, working conditions, and promotion opportunities.

Contact employers to solicit orders for job vacancies, determining their requirements and recording relevant data such as job descriptions.

Perform reference and background checks on applicants.

Interview job applicants to match their qualifications with employers' needs, recording and evaluating applicant experience, education, training, and skills.

Review employment applications and job orders to match applicants with job requirements, using manual or computerized file searches.

Top Work Activities

Getting Information

Establishing and Maintaining Interpersonal Relationships

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Personnel and Human Resources

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 366 | 440 | 20.22 | 74 | 170 | \$27,951 | \$38,878 | \$44,341 |

Compensation, Benefits, and Job Analysis Specialists

13-1072 | Business Management, Administration & Finance | Enterprising | Exceptional Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Occupational Analyst; Relocation Director; Wage Conciliator

Occupational Description

Conduct programs of compensation and benefits and job analysis for employer. May specialize in specific areas, such as position classification and pension programs.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Ensure company compliance with federal and state laws, including reporting requirements.

Evaluate job positions, determining classification, exempt or non-exempt status, and salary.

Plan, develop, evaluate, improve, and communicate methods and techniques for selecting, promoting, compensating, evaluating, and training workers.

Prepare occupational classifications, job descriptions and salary scales.

Provide advice on the resolution of classification and salary complaints.

Top Work Activities

Getting Information

Analyzing Data or Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Critical Thinking

Reading Comprehension

Top Knowledge

Personnel and Human Resources

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 186 | 237 | 27.42 | 51 | 100 | \$35,031 | \$52,951 | \$61,910 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Training and Development Specialists

13-1073 | Business Management, Administration & Finance | Social | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Training Coordinator; Workforce Development Specialist; Supervisor, Training Personnel

Occupational Description

Conduct training and development programs for employees.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Monitor, evaluate and record training activities and program effectiveness.
- Offer specific training programs to help workers maintain or improve job skills.
- Assess training needs through surveys, interviews with employees, focus groups, or consultation with managers, instructors or customer representatives.
- Organize and develop, or obtain, training procedure manuals and guides and course materials such as handouts and visual materials.
- Develop alternative training methods if expected improvements are not seen.

Top Work Activities

- Training and Teaching Others
- Communicating with Supervisors, Peers, or Subordinates
- Establishing and Maintaining Interpersonal Relationships

Top Skills

- Speaking
- Reading Comprehension
- Learning Strategies

Top Knowledge

- Education and Training
- English Language
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|-----------------|-------------|
| 502 | 620 | 23.51 | 118 | 131 | 249 | \$31,120 | \$47,894 | \$56,281 |

Logisticians

13-1081 | Transportation, Distribution & Logistics | Enterprising | Below Average Growth | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Logistics Engineer; Logistics Analyst; Logistics Planner

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Maintain and develop positive business relationships with a customer's key personnel involved in or directly relevant to a logistics activity.
- Develop an understanding of customers' needs and take actions to ensure that such needs are met.
- Direct availability and allocation of materials, supplies, and finished products.
- Collaborate with other departments as necessary to meet customer requirements, to take advantage of sales opportunities or, in the case of shortages, to minimize negative impacts on a business.
- Protect and control proprietary materials.

Top Work Activities

- Interacting with Computers
- Communicating with Persons Outside Organization
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Critical Thinking
- Active Listening
- Reading Comprehension

Top Knowledge

- English Language
- Customer and Personal Service
- Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|-----------------|-------------|
| 61 | 66 | 8.20 | 5 | 14 | 19 | \$46,927 | \$62,162 | \$69,780 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Management Analysts

13-1111 | Business Management, Administration & Finance | Investigative | Very High Growth

HIGH DEMAND | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Business Consultant; Industrial Analyst; Price Analyst

Occupational Description

Conduct organizational studies and evaluations, design systems and procedures, conduct work simplifications and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Include program analysts and management consultants. Exclude "Computer Systems Analysts" (15-1051) and "Operations Research Analysts" (15-2031).

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Gather and organize information on problems or procedures.
- Analyze data gathered and develop solutions or alternative methods of proceeding.
- Confer with personnel concerned to ensure successful functioning of newly implemented systems or procedures.
- Develop and implement records management program for filing, protection, and retrieval of records, and assure compliance with program.
- Review forms and reports and confer with management and users about format, distribution, and purpose, and to identify problems and improvements.

Top Work Activities

- Getting Information
- Communicating with Supervisors, Peers, or Subordinates
- Establishing and Maintaining Interpersonal Relationships

Top Skills

- Reading Comprehension
- Active Listening
- Speaking

Top Knowledge

- Customer and Personal Service
- Administration and Management
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 558 | 639 | 14.52 | 81 | 96 | 177 | \$44,018 | \$66,630 | \$77,936 |

Meeting and Convention Planners

13-1121 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Conference Planner; Conference Service Coordinator; Convention Manager

Occupational Description

Coordinate activities of staff and convention personnel to make arrangements for group meetings and conventions. Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Monitor event activities to ensure compliance with applicable regulations and laws, satisfaction of participants, and resolution of any problems that arise.
- Confer with staff at a chosen event site to coordinate details.
- Inspect event facilities to ensure that they conform to customer requirements.
- Coordinate services for events, such as accommodation and transportation for participants, facilities, catering, signage, displays, special needs requirements, printing and event security.
- Consult with customers to determine objectives and requirements for events such as meetings, conferences, and conventions.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Communicating with Persons Outside Organization
- Establishing and Maintaining Interpersonal Relationships

Top Skills

- Active Listening
- Speaking
- Reading Comprehension

Top Knowledge

- Customer and Personal Service
- English Language
- Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 58 | 62 | 6.90 | 4 | 13 | 17 | \$24,220 | \$31,983 | \$35,865 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Accountants and Auditors

13-2011 | Business Management, Administration & Finance | Conventional | Exceptional Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Bursar; Certified Public Accountant; Tax Accountant

Occupational Description

Examine, analyze, and interpret accounting records for the purpose of giving advice or preparing statements. Install or advise on systems of recording costs or other financial and budgetary data.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare, examine, or analyze accounting records, financial statements, or other financial reports to assess accuracy, completeness, and conformance to reporting and procedural standards.

Report to management regarding the finances of establishment.

Establish tables of accounts and assign entries to proper accounts.

Develop, implement, modify, and document recordkeeping and accounting systems, making use of current computer technology.

Top Work Activities

Interacting with Computers

Processing Information

Getting Information

Top Skills

Active Listening

Mathematics

Reading Comprehension

Top Knowledge

Economics and Accounting

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,869 | 3,474 | 21.09 | 605 | 485 | 1,090 | \$33,760 | \$50,549 | \$58,944 |

Appraisers and Assessors of Real Estate

13-2021 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Building Appraiser; County Assessor; Property Evaluator

Occupational Description

Appraise real property to determine its fair value. May assess taxes in accordance with prescribed schedules.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare written reports that estimate property values, outline methods by which the estimations were made, and meet appraisal standards.

Compute final estimation of property values, taking into account such factors as depreciation, replacement costs, value comparisons of similar properties, and income potential.

Search public records for transactions such as sales, leases, and assessments.

Inspect properties to evaluate construction, condition, special features, and functional design, and to take property measurements.

Photograph interiors and exteriors of properties to assist in estimating property value, substantiate findings, and complete appraisal reports.

Top Work Activities

Getting Information

Interacting with Computers

Processing Information

Top Skills

Reading Comprehension

Critical Thinking

Active Listening

Top Knowledge

Customer and Personal Service

Building and Construction

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 221 | 242 | 9.50 | 21 | 40 | 61 | \$24,500 | \$46,551 | \$57,576 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Budget Analysts

13-2031 | Business Management, Administration & Finance | Conventional | Avg to Above Avg Growth |

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Budget Examiner; Fiscal Agent; Fiscal Officer

Occupational Description

Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports for the purpose of maintaining expenditure controls.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Direct the preparation of regular and special budget reports.

Analyze monthly department budgeting and accounting reports to maintain expenditure controls.

Provide advice and technical assistance with cost analysis, fiscal allocation, and budget preparation.

Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations.

Summarize budgets and submit recommendations for the approval or disapproval of funds requests.

Top Work Activities

Interacting with Computers

Getting Information

Analyzing Data or Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Economics and Accounting

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 92 | 102 | 10.87 | 10 | 17 | 27 | \$45,924 | \$61,073 | \$68,647 |

Financial Analysts

13-2051 | Business Management, Administration & Finance | Conventional | Exceptional Growth |

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Bond Analyst; Investment Analyst; Securities Consultant

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Draw charts and graphs, using computer spreadsheets, to illustrate technical reports.

Inform investment decisions by analyzing financial information to forecast business, industry, or economic conditions.

Monitor developments in the fields of industrial technology, business, finance, and economic theory.

Interpret data on price, yield, stability, future investment-risk trends, economic influences, and other factors affecting investment programs.

Monitor fundamental economic, industrial, and corporate developments by analyzing information from financial publications and services, investment banking firms, government agencies, trade publications, company sources, or personal interviews.

Top Work Activities

Analyzing Data or Information

Getting Information

Interacting with Computers

Top Skills

Reading Comprehension

Writing

Critical Thinking

Top Knowledge

Economics and Accounting

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 364 | 491 | 34.89 | 127 | 66 | 193 | \$39,986 | \$60,421 | \$70,639 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Personal Financial Advisors

13-2052 | Business Management, Administration & Finance | Enterprising | Exceptional Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Budget Counselor; Financial Planner; Estate Planner

Occupational Description

Advise clients on financial plans utilizing knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate. Duties include assessing clients' assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives to establish investment strategies.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sell financial products such as stocks, bonds, mutual funds, and insurance if licensed to do so.

Build and maintain client bases, keeping current client plans up-to-date and recruiting new clients on an ongoing basis.

Analyze financial information obtained from clients to determine strategies for meeting clients' financial objectives.

Answer clients' questions about the purposes and details of financial plans and strategies.

Review clients' accounts and plans regularly to determine whether life changes, economic changes, or financial performance indicate a need for plan reassessment.

Top Work Activities

Getting Information

Processing Information

Communicating with Persons Outside Organization

Top Skills

Speaking

Critical Thinking

Reading Comprehension

Top Knowledge

Customer and Personal Service

Sales and Marketing

Economics and Accounting

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|-----------------|-------------|
| 309 | 415 | 34.30 | 106 | 139 | \$31,553 | \$58,284 | \$71,650 |

Financial Examiners

13-2061 | Business Management, Administration & Finance | Enterprising | Exceptional Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Bank Examiner; Payroll Examiner; Pension Examiner

Occupational Description

Enforce or ensure compliance with laws and regulations governing financial and securities institutions and financial and real estate transactions. May examine, verify correctness of, or establish authenticity of records.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Investigate activities of institutions to enforce laws and regulations and to ensure legality of transactions and operations or financial solvency.

Review and analyze new, proposed, or revised laws, regulations, policies, and procedures to interpret their meaning and determine their impact.

Plan, supervise, and review work of assigned subordinates.

Recommend actions to ensure compliance with laws and regulations, or to protect solvency of institutions.

Examine the minutes of meetings of directors, stockholders and committees to investigate the specific authority extended at various levels of management.

Top Work Activities

Evaluating Information to Determine Compliance with Standards

Getting Information

Interacting with Computers

Top Skills

Reading Comprehension

Critical Thinking

Speaking

Top Knowledge

English Language

Economics and Accounting

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|-----------------|-------------|
| 97 | 128 | 31.96 | 31 | 49 | \$44,648 | \$68,080 | \$79,796 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Loan Counselors

13-2071 | Business Management, Administration & Finance | Enterprising | Avg to Above Avg Growth |

HIGH SKILL

Alternate Job Title(s): Credit Counselor; Farm Mortgage Agent; Financial Aid Counselor

Occupational Description

Provide guidance to prospective loan applicants who have problems qualifying for traditional loans. Guidance may include determining the best type of loan and explaining loan requirements or restrictions.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Check loan agreements to ensure that they are complete and accurate, according to policies.

Refer loans to loan committees for approval.

Approve loans within specified limits.

Submit applications to credit analysts for verification and recommendation.

Analyze applicants' financial status, credit, and property evaluations to determine feasibility of granting loans.

Top Work Activities

Getting Information

Evaluating Information to Determine Compliance with Standards

Analyzing Data or Information

Top Skills

Active Listening

Critical Thinking

Reading Comprehension

Top Knowledge

Customer and Personal Service

English Language

Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 70 | 78 | 11.43 | 8 | 8 | 16 | \$30,227 | \$42,035 | \$47,938 |

Loan Officers

13-2072 | Business Management, Administration & Finance | Conventional | Very High Growth |

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Loan Reviewer; Escrow Officer; Mortgage Consultant

Occupational Description

Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and methods of payments. Include mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Approve loans within specified limits, and refer loan applications outside those limits to management for approval.

Meet with applicants to obtain information for loan applications and to answer questions about the process.

Analyze applicants' financial status, credit, and property evaluations to determine feasibility of granting loans.

Explain to customers the different types of loans and credit options that are available, as well as the terms of those services.

Obtain and compile copies of loan applicants' credit histories, corporate financial statements, and other financial information.

Top Work Activities

Making Decisions and Solving Problems

Processing Information

Analyzing Data or Information

Top Skills

Speaking

Active Listening

Judgment and Decision Making

Top Knowledge

Sales and Marketing

Customer and Personal Service

Economics and Accounting

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,237 | 1,459 | 17.95 | 222 | 135 | 357 | \$37,309 | \$55,265 | \$64,243 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Tax Examiners, Collectors, and Revenue Agents

13-2081 | Business Management, Administration & Finance | Conventional | Below Average Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Tax Investigator; Revenue Agent; Tax Auditor

Occupational Description

Determine tax liability or collect taxes from individuals or business firms according to prescribed laws and regulations.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect taxes from individuals or businesses according to prescribed laws and regulations.

Maintain knowledge of tax code changes, and of accounting procedures and theory to properly evaluate financial information.

Maintain records for each case, including contacts, telephone numbers, and actions taken.

Confer with taxpayers or their representatives to discuss the issues, laws, and regulations involved in returns, and to resolve problems with returns.

Contact taxpayers by mail or telephone to address discrepancies and to request supporting documentation.

Top Work Activities

Evaluating Information to Determine Compliance with Standards

Getting Information

Communicating with Persons Outside Organization

Top Skills

Reading Comprehension

Active Listening

Critical Thinking

Top Knowledge

Law and Government

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 69 | 75 | 8.70 | 6 | 24 | 30 | \$42,729 | \$67,152 | \$79,363 |

Tax Preparers

13-2082 | Business Management, Administration & Finance | Conventional | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Income Tax Advisor; Income Tax Consultant; Tax Specialist

Occupational Description

Prepare tax returns for individuals or small businesses but do not have the background or responsibilities of an accredited or certified public accountant.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Compute taxes owed or overpaid, using adding machines or personal computers, and complete entries on forms, following tax form instructions and tax tables.

Prepare or assist in preparing simple to complex tax returns for individuals or small businesses.

Use all appropriate adjustments, deductions, and credits to keep clients' taxes to a minimum.

Interview clients to obtain additional information on taxable income and deductible expenses and allowances.

Review financial records such as income statements and documentation of expenditures to determine forms needed to prepare tax returns.

Top Work Activities

Processing Information

Evaluating Information to Determine Compliance with Standards

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Critical Thinking

Top Knowledge

Economics and Accounting

Customer and Personal Service

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 94 | 89 | -5.32 | 0 | 15 | 15 | \$20,918 | \$29,268 | \$33,443 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Computer Programmers

15-1021 | Information Technology

Investigative | Declining Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Computer Programmer Aide; Mainframe Programmer; Systems Programmer

Occupational Description

Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Correct errors by making appropriate changes and rechecking the program to ensure that the desired results are produced.

Conduct trial runs of programs and software applications to be sure they will produce the desired information and that the instructions are correct.

Write, update, and maintain computer programs or software packages to handle specific jobs such as tracking inventory, storing or retrieving data, or controlling other equipment.

Write, analyze, review, and rewrite programs, using workflow chart and diagram, and applying knowledge of computer capabilities, subject matter, and symbolic logic.

Perform or direct revision, repair, or expansion of existing programs to increase operating efficiency or adapt to new requirements.

Top Work Activities

Interacting with Computers

Making Decisions and Solving Problems

Getting Information

Top Skills

Programming

Reading Comprehension

Critical Thinking

Top Knowledge

Computers and Electronics

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 540 | 483 | -10.56 | 0 | 102 | 102 | \$34,445 | \$50,637 | \$58,733 |

Computer Software Engineers, Applications

15-1031 | Information Technology

Investigative | Exceptional Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Applications Developer; Programmer Analyst; Software Designer

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Modify existing software to correct errors, allow it to adapt to new hardware, or to improve its performance.

Develop and direct software system testing and validation procedures, programming, and documentation.

Confer with systems analysts, engineers, programmers and others to design system and to obtain information on project limitations and capabilities, performance requirements and interfaces.

Analyze user needs and software requirements to determine feasibility of design within time and cost constraints.

Design, develop and modify software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design.

Top Work Activities

Interacting with Computers

Thinking Creatively

Making Decisions and Solving Problems

Top Skills

Complex Problem Solving

Programming

Systems Analysis

Top Knowledge

Computers and Electronics

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 675 | 874 | 29.48 | 199 | 57 | 256 | \$44,773 | \$65,613 | \$76,033 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Computer Support Specialists

15-1041 | Information Technology | Realistic | Very High Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Customer Support Analyst; Help Desk Technician; Work Station Support Specialist

Occupational Description

Provide technical assistance to computer system users. Answer questions or resolve computer problems for clients in person, via telephone or from remote location. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems. Exclude "Network and Computer Systems Administrators" (15-1071).

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Oversee the daily performance of computer systems.
- Answer user inquiries regarding computer software or hardware operation to resolve problems.
- Enter commands and observe system functioning to verify correct operations and detect errors.
- Set up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software.
- Install and perform minor repairs to hardware, software, or peripheral equipment, following design or installation specifications.

Top Work Activities

Interacting with Computers

Getting Information

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Computers and Electronics

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|----------------|----------|----------------|-------------|
| 1,515 | 1,781 | 17.56 | 266 | 419 | \$23,967 | \$37,345 | \$44,035 |

Computer Systems Analysts

15-1051 | Information Technology | Investigative | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Health Systems Computer Analyst; Data Processing Systems Project Planner; Information Systems Consultant

Occupational Description

Analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software. Exclude persons working primarily as "Engineers" (17-2011 through 17-2199), "Mathematicians" (15-2021), or "Scientists" (19-1011 through 19-3099). May supervise computer programmers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Expand or modify system to serve new purposes or improve work flow.
- Test, maintain, and monitor computer programs and systems, including coordinating the installation of computer programs and systems.
- Develop, document and revise system design procedures, test procedures, and quality standards.
- Provide staff and users with assistance solving computer related problems, such as malfunctions and program problems.
- Review and analyze computer printouts and performance indicators to locate code problems, and correct errors by correcting codes.

Top Work Activities

Interacting with Computers

Making Decisions and Solving Problems

Processing Information

Top Skills

Critical Thinking

Reading Comprehension

Active Listening

Top Knowledge

Computers and Electronics

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|----------------|----------|----------------|-------------|
| 883 | 1,075 | 21.74 | 192 | 190 | \$42,814 | \$62,343 | \$72,107 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Network and Computer Systems Administrators

15-1071 | Information Technology | Investigative | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): LAN/WAN Administrator; Network Control Operator; Network Security Administrator

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain and administer computer networks and related computing environments including computer hardware, systems software, applications software, and all configurations.

Perform data backups and disaster recovery operations.

Diagnose, troubleshoot, and resolve hardware, software, or other network and system problems, and replace defective components when necessary.

Plan, coordinate, and implement network security measures to protect data, software, and hardware.

Configure, monitor, and maintain email applications or virus protection software.

Top Work Activities

Interacting with Computers

Getting Information

Identifying Objects, Actions, and Events

Top Skills

Reading Comprehension

Critical Thinking

Systems Analysis

Top Knowledge

Computers and Electronics

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 471 | 566 | 20.17 | 95 | 174 | \$38,845 | \$51,660 | \$58,068 |

Network Systems and Data Communications Analysts

15-1081 | Information Technology | Investigative | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Internet Developer; Systems Integrator; Webmaster

Occupational Description

Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems. Perform network modeling, analysis, and planning. Research and recommend network and data communications hardware and software. Include telecommunications specialists who deal with the interfacing of computer and communications equipment. May supervise computer programmers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain needed files by adding and deleting files on the network server and backing up files to guarantee their safety in the event of problems with the network.

Test and evaluate hardware and software to determine efficiency, reliability, and compatibility with existing system, and make purchase recommendations.

Design and implement systems, network configurations, and network architecture, including hardware and software technology, site locations, and integration of technologies.

Assist users to diagnose and solve data communication problems.

Monitor system performance and provide security measures, troubleshooting and maintenance as needed.

Top Work Activities

Interacting with Computers

Updating and Using Relevant Knowledge

Getting Information

Top Skills

Systems Analysis

Active Learning

Active Listening

Top Knowledge

Computers and Electronics

Telecommunications

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 311 | 465 | 49.52 | 154 | 210 | \$40,396 | \$59,163 | \$68,546 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Operations Research Analysts

15-2031 | Business Management, Administration & Finance | Investigative | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Procedure Analyst; Method Consultant; Standards Analyst

Occupational Description

Formulate and apply mathematical modeling and other optimizing methods using a computer to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May develop related software, service, or products. Frequently concentrates on collecting and analyzing data and developing decision support software. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Formulate mathematical or simulation models of problems, relating constants and variables, restrictions, alternatives, conflicting objectives, and their numerical parameters.

Collaborate with others in the organization to ensure successful implementation of chosen problem solutions.

Analyze information obtained from management to conceptualize and define operational problems.

Perform validation and testing of models to ensure adequacy and reformulate models as necessary.

Collaborate with senior managers and decision makers to identify and solve a variety of problems and to clarify management objectives.

Top Work Activities

Analyzing Data or Information

Interacting with Computers

Making Decisions and Solving Problems

Top Skills

Mathematics

Critical Thinking

Complex Problem Solving

Top Knowledge

Mathematics

Computers and Electronics

Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 86 | 106 | 23.26 | 20 | 25 | 45 | \$35,863 | \$53,453 | \$62,248 |

Architects, Except Landscape and Naval

17-1011 | Architecture & Construction | Artistic | Exceptional Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Architectural Designer; Building Consultant; Site Planner

Occupational Description

Plan and design structures, such as private residences, office buildings, theaters, factories, and other structural property.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Consult with client to determine functional and spatial requirements of structure.

Prepare scale drawings.

Plan layout of project.

Prepare information regarding design, structure specifications, materials, color, equipment, estimated costs, or construction time.

Prepare contract documents for building contractors.

Top Work Activities

Thinking Creatively

Making Decisions and Solving Problems

Communicating with Persons Outside Organization

Top Skills

Active Listening

Critical Thinking

Speaking

Top Knowledge

Design

Building and Construction

Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 301 | 365 | 21.26 | 64 | 51 | 115 | \$39,990 | \$60,657 | \$70,990 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Surveyors

17-1022 | Architecture & Construction | Realistic | Exceptional Growth | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Geodetic Surveyor; Land Examiner; Mineral Surveyor

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Verify the accuracy of survey data including measurements and calculations conducted at survey sites.
- Calculate heights, depths, relative positions, property lines, and other characteristics of terrain.
- Search legal records, survey records, and land titles to obtain information about property boundaries in areas to be surveyed.
- Prepare and maintain sketches, maps, reports, and legal descriptions of surveys to describe, certify, and assume liability for work performed.
- Direct or conduct surveys to establish legal boundaries for properties, based on legal deeds and titles.

Top Work Activities

- Making Decisions and Solving Problems
- Getting Information
- Interacting with Computers

Top Skills

- Reading Comprehension
- Mathematics
- Writing

Top Knowledge

- Mathematics
- Law and Government
- Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 256 | 311 | 21.48 | 55 | 120 | \$21,478 | \$45,750 | \$57,886 |

Civil Engineers

17-2051 | Science, Engineering & Mathematics | Realistic | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Bridge Engineer; Construction Engineer; Concrete Engineer

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Manage and direct staff members and the construction, operations, or maintenance activities at project site.
- Provide technical advice regarding design, construction, or program modifications and structural repairs to industrial and managerial personnel.
- Inspect project sites to monitor progress and ensure conformance to design specifications and safety or sanitation standards.
- Estimate quantities and cost of materials, equipment, or labor to determine project feasibility.
- Test soils and materials to determine the adequacy and strength of foundations, concrete, asphalt, or steel.

Top Work Activities

- Making Decisions and Solving Problems
- Communicating with Supervisors, Peers, or Subordinates
- Getting Information

Top Skills

- Mathematics
- Critical Thinking
- Complex Problem Solving

Top Knowledge

- Engineering and Technology
- Design
- Building and Construction

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 644 | 828 | 28.57 | 184 | 293 | \$47,723 | \$67,058 | \$76,725 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Electrical Engineers

17-2071 | Science, Engineering & Mathematics

Investigative | High Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Power Distribution Engineer; Illuminating Engineer; Relay Engineer

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and study technical drawings, specifications of electrical systems, and topographical maps to ensure that installation and operations conform to standards and customer requirements.

Operate computer-assisted engineering and design software and equipment to perform engineering tasks.

Confer with engineers, customers, and others to discuss existing or potential engineering projects and products.

Direct and coordinate manufacturing, construction, installation, maintenance, support, documentation, and testing activities to ensure compliance with specifications, codes, and customer requirements.

Design, implement, maintain, and improve electrical instruments, equipment, facilities, components, products, and systems for commercial, industrial, and domestic purposes.

Top Work Activities

Making Decisions and Solving Problems

Interacting with Computers

Getting Information

Top Skills

Reading Comprehension

Critical Thinking

Active Listening

Top Knowledge

Engineering and Technology

Design

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 239 | 270 | 12.97 | 31 | 55 | 86 | \$55,450 | \$74,432 | \$83,923 |

Environmental Engineers

17-2081 | Natural Resources & Mining

Investigative | Avg to Above Avg Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Soil Engineer; Industrial Hygiene Engineer; Pollution Control Engineer

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collaborate with environmental scientists, planners, hazardous waste technicians, engineers, and other specialists, and experts in law and business to address environmental problems.

Inspect industrial and municipal facilities and programs to evaluate operational effectiveness and ensure compliance with environmental regulations.

Prepare, review, and update environmental investigation and recommendation reports.

Design and supervise the development of systems processes or equipment for control, management, or remediation of water, air, or soil quality.

Provide environmental engineering assistance in network analysis, regulatory analysis, and planning or reviewing database development.

Top Work Activities

Getting Information

Interacting with Computers

Evaluating Information to Determine Compliance with Standards

Top Skills

Reading Comprehension

Critical Thinking

Active Listening

Top Knowledge

Engineering and Technology

Design

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 99 | 110 | 11.11 | 11 | 21 | 32 | \$46,334 | \$67,811 | \$78,550 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Industrial Engineers

17-2112 | Science, Engineering & Mathematics

Investigative | Very High Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Packaging Engineer; Time Study Engineer; Plant Engineer

Occupational Description

Design, develop, test, and evaluate integrated systems for managing industrial production processes including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination. Exclude "Health and Safety Engineers, Except Mining Safety Engineers and Inspectors" (17-2111).

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan and establish sequence of operations to fabricate and assemble parts or products and to promote efficient utilization.

Review production schedules, engineering specifications, orders, and related information to obtain knowledge of manufacturing methods, procedures, and activities.

Estimate production costs, cost saving methods, and the effects of product design changes on expenditures for management review, action, and control.

Draft and design layout of equipment, materials, and workspace to illustrate maximum efficiency using drafting tools and computer.

Coordinate and implement quality control objectives, activities, or procedures to resolve production problems, maximize product reliability, or minimize costs.

Top Work Activities

Making Decisions and Solving Problems

Getting Information

Identifying Objects, Actions, and Events

Top Skills

Reading Comprehension

Active Listening

Writing

Top Knowledge

Engineering and Technology

Production and Processing

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 404 | 475 | 17.57 | 71 | 103 | 174 | \$51,936 | \$68,719 | \$77,110 |

Mechanical Engineers

17-2141 | Science, Engineering & Mathematics

Investigative | Avg to Above Avg Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Combustion Engineer; Plant Equipment Engineer; Hydraulic Engineer

Occupational Description

Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of such equipment as centralized heat, gas, water, and steam systems.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read and interpret blueprints, technical drawings, schematics, and computer-generated reports.

Assist drafters in developing the structural design of products using drafting tools or computer-assisted design (CAD) or drafting equipment and software.

Research, design, evaluate, install, operate, and maintain mechanical products, equipment, systems and processes to meet requirements, applying knowledge of engineering principles.

Confer with engineers and other personnel to implement operating procedures, resolve system malfunctions, and provide technical information.

Recommend design modifications to eliminate machine or system malfunctions.

Top Work Activities

Interacting with Computers

Getting Information

Making Decisions and Solving Problems

Top Skills

Complex Problem Solving

Critical Thinking

Reading Comprehension

Top Knowledge

Engineering and Technology

Design

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 473 | 524 | 10.78 | 51 | 121 | 172 | \$47,825 | \$68,481 | \$78,809 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Petroleum Engineers

17-2171 | Science, Engineering & Mathematics | Investigative | Exceptional Growth |

HIGH WAGE | **HIGH SKILL**

Alternate Job Title(s): Drilling Engineer; Natural Gas Engineer; Oil Well Surveying Engineer

Occupational Description

Devise methods to improve oil and gas well production and determine the need for new or modified tool designs. Oversee drilling and offer technical advice to achieve economical and satisfactory progress.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Assess costs and estimate the production capabilities and economic value of oil and gas wells, to evaluate the economic viability of potential drilling sites.

Develop plans for oil and gas field drilling, and for product recovery and treatment.

Analyze data to recommend placement of wells and supplementary processes to enhance production.

Direct and monitor the completion and evaluation of wells, well testing, or well surveys.

Monitor production rates, and plan rework processes to improve production.

Top Work Activities

Getting Information

Interacting with Computers

Making Decisions and Solving Problems

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Engineering and Technology

Mathematics

Physics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|------------------|-------------|
| 75 | 140 | 86.67 | 65 | 16 | 81 | \$77,193 | \$163,057 | \$205,989 |

Architectural and Civil Drafters

17-3011 | Architecture & Construction | Realistic | Very High Growth |

MEDIUM SKILL

Alternate Job Title(s): Structural Drafter

Occupational Description

Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Utilize knowledge of building materials, engineering practices, and mathematics to complete drawings.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Produce drawings using computer-assisted drafting systems (CAD) or drafting machines, or by hand using compasses, dividers, protractors, triangles and other drafting devices.

Draw maps, diagrams, and profiles, using cross-sections and surveys, to represent elevations, topographical contours, subsurface formations and structures.

Draft plans and detailed drawings for structures, installations, and construction projects such as highways, sewage disposal systems, and dikes, working from sketches or notes.

Determine the order of work and method of presentation, such as orthographic or isometric drawing.

Finish and duplicate drawings and documentation packages, according to required mediums and specifications for reproduction using blueprinting, photography, or other duplicating methods.

Top Work Activities

Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment

Interacting with Computers

Getting Information

Top Skills

Active Listening

Reading Comprehension

Writing

Top Knowledge

Design

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 228 | 260 | 14.04 | 32 | 49 | 81 | \$26,391 | \$36,130 | \$41,000 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Electrical and Electronics Drafters

17-3012 | Architecture & Construction

Realistic

| Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Use computer-aided drafting equipment or conventional drafting stations, technical handbooks, tables, calculators, and traditional drafting tools, such as boards, pencils, protractors, and T-squares.

Confer with engineering staff and other personnel to resolve problems.

Draft working drawings, wiring diagrams, wiring connection specifications or cross-sections of underground cables, as required for instructions to installation crew.

Draw master sketches to scale showing relation of proposed installations to existing facilities and exact specifications and dimensions.

Measure factors that affect installation and arrangement of equipment, such as distances to be spanned by wire and cable.

Top Work Activities

Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment

Top Skills

Speaking

Top Knowledge

Design

Interacting with Computers

Active Listening

Engineering and Technology

Evaluating Information to Determine Compliance with Standards

Reading Comprehension

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 56 | 61 | 8.93 | 5 | 12 | 17 | \$30,706 | \$40,802 | \$45,851 |

Mechanical Drafters

17-3013 | Architecture & Construction

Realistic

| Avg to Above Avg Growth

MEDIUM SKILL

Alternate Job Title(s): Die Designer; Aeronautical Drafter

Occupational Description

Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Develop detailed design drawings and specifications for mechanical equipment, dies, tools, and controls, using computer-assisted drafting (CAD) equipment.

Lay out and draw schematic, orthographic, or angle views to depict functional relationships of components, assemblies, systems, and machines.

Coordinate with and consult other workers to design, lay out, or detail components and systems and to resolve design or other problems.

Check dimensions of materials to be used and assign numbers to the materials.

Review and analyze specifications, sketches, drawings, ideas, and related data to assess factors affecting component designs and the procedures and instructions to be followed.

Top Work Activities

Interacting with Computers

Top Skills

Active Learning

Top Knowledge

Design

Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment

Active Listening

Engineering and Technology

Getting Information

Speaking

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 200 | 222 | 11.00 | 22 | 43 | 65 | \$25,474 | \$35,573 | \$40,623 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Civil Engineering Technicians

17-3022 | Manufacturing | Realistic | Exceptional Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Highway Technician

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Draft detailed dimensional drawings and design layouts for projects and to ensure conformance to specifications.
- Calculate dimensions, square footage, profile and component specifications, and material quantities using calculator or computer.
- Read and review project blueprints and structural specifications to determine dimensions of structure or system and material requirements.
- Confer with supervisor to determine project details such as plan preparation, acceptance testing, and evaluation of field conditions.
- Inspect project site and evaluate contractor work to detect design malfunctions and ensure conformance to design specifications and applicable codes.

Top Work Activities

- Interacting with Computers
- Communicating with Supervisors, Peers, or Subordinates
- Getting Information

Top Skills

- Reading Comprehension
- Active Listening
- Critical Thinking

Top Knowledge

- Building and Construction
- Mathematics
- Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 399 | 495 | 24.06 | 96 | 75 | 171 | \$30,420 | \$40,700 | \$45,840 |

Electrical and Electronic Engineering Technicians

17-3023 | Manufacturing | Realistic | Below Average Growth | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Calibration Laboratory Technician; Semiconductor Development Technician; Instrumentation Technician

Occupational Description

Apply electrical and electronic theory and related knowledge, usually under the direction of engineering staff, to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions. Exclude "Broadcast Technicians" (27-4012).

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Set up and operate test equipment to evaluate performance of developmental parts, assemblies, or systems under simulated operating conditions, and record results.
- Assemble electrical and electronic systems and prototypes according to engineering data and knowledge of electrical principles, using hand tools and measuring instruments.
- Provide technical assistance and resolution when electrical or engineering problems are encountered before, during, and after construction.
- Build, calibrate, maintain, troubleshoot and repair electrical instruments or testing equipment.
- Review existing electrical engineering criteria to identify necessary revisions, deletions or amendments to outdated material.

Top Work Activities

- Making Decisions and Solving Problems
- Identifying Objects, Actions, and Events
- Getting Information

Top Skills

- Critical Thinking
- Reading Comprehension
- Complex Problem Solving

Top Knowledge

- Computers and Electronics
- Mathematics
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 242 | 246 | 1.65 | 4 | 46 | 50 | \$35,863 | \$51,538 | \$59,375 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Mechanical Engineering Technicians

17-3027 | Manufacturing

Realistic

Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Heat Transfer Technician; Optomechanical Technician; Tool Analyst

Occupational Description

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

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read dials and meters to determine amperage, voltage, electrical output and input at specific operating temperature to analyze parts performance.

Analyze test results in relation to design or rated specifications and test objectives, and modify or adjust equipment to meet specifications.

Evaluate tool drawing designs by measuring drawing dimensions and comparing with original specifications for form and function using engineering skills.

Devise, fabricate, and assemble new or modified mechanical components for products such as industrial machinery or equipment, and measuring instruments.

Discuss changes in design, method of manufacture and assembly, and drafting techniques and procedures with staff and coordinate corrections.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Inspecting Equipment, Structures, or Material

Top Skills

Reading Comprehension

Active Listening

Critical Thinking

Top Knowledge

Mechanical

Engineering and Technology

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 72 | 74 | 2.78 | 2 | 14 | 16 | \$36,521 | \$51,129 | \$58,433 |

Surveying and Mapping Technicians

17-3031 | Science, Engineering & Mathematics

Realistic

Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Cartographic Technician; Map Drafter; Stereo Map Plotter Operator

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adjust and operate surveying instruments such as prisms, theodolites, and electronic distance-measuring equipment.

Perform calculations to determine earth curvature corrections, atmospheric impacts on measurements, traverse closures and adjustments, azimuths, level runs, and placement of markers.

Record survey measurements and descriptive data using notes, drawings, sketches, and inked tracings.

Search for section corners, property irons, and survey points.

Position and hold the vertical rods, or targets, that theodolite operators use for sighting to measure angles, distances, and elevations.

Top Work Activities

Documenting and Recording Information

Getting Information

Interacting with Computers

Top Skills

Critical Thinking

Reading Comprehension

Active Listening

Top Knowledge

Mathematics

Engineering and Technology

Geography

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 204 | 250 | 22.55 | 46 | 36 | 82 | \$25,108 | \$36,449 | \$42,120 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Food Scientists and Technologists

19-1012 | Natural Resources & Mining

Investigative | Very High Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): N/A

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Check raw ingredients for maturity or stability for processing and finished products for safety, quality, and nutritional value.

Confer with process engineers, plant operators, flavor experts, and packaging and marketing specialists to resolve problems in product development.

Develop new or improved ways of preserving, processing, packaging, storing, and delivering foods, using knowledge of chemistry, microbiology, and other sciences.

Develop new food items for production, based on consumer feedback.

Develop food standards and production specifications, safety and sanitary regulations, and waste management and water supply specifications.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Top Knowledge

Production and Processing

Evaluating Information to Determine Compliance with Standards

Active Listening

Chemistry

Getting Information

Writing

Food Production

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 60 | 71 | 18.33 | 11 | 21 | 32 | \$38,289 | \$60,441 | \$71,517 |

Soil and Plant Scientists

19-1013 | Natural Resources & Mining

Investigative | Avg to Above Avg Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Agronomist; Plant Pathologist; Pomologist

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Communicate research and project results to other professionals and the public or teach related courses, seminars, or workshops.

Provide information and recommendations to farmers and other landowners regarding ways in which they can best use land, promote plant growth, and avoid or correct problems such as erosion.

Investigate responses of soils to specific management practices to determine the use capabilities of soils and the effects of alternative practices on soil productivity.

Develop methods of conserving and managing soil that can be applied by farmers and forestry companies.

Conduct experiments to develop new or improved varieties of field crops, focusing on characteristics such as yield, quality, disease resistance, nutritional value, or adaptation to specific soils or climates.

Top Work Activities

Getting Information

Top Skills

Science

Top Knowledge

Biology

Analyzing Data or Information

Active Listening

English Language

Interacting with Computers

Speaking

Chemistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 140 | 155 | 10.71 | 15 | 49 | 64 | \$37,048 | \$56,822 | \$66,710 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Zoologists and Wildlife Biologists

19-1023 | Natural Resources & Mining | Investigative | Below Average Growth

HIGH WAGE | **HIGH SKILL**

Alternate Job Title(s): Ecologist; Herpetologist; Ornithologist

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Study animals in their natural habitats, assessing effects of environment and industry on animals, interpreting findings and recommending alternative operating conditions for industry.

Inventory or estimate plant and wildlife populations.

Organize and conduct experimental studies with live animals in controlled or natural surroundings.

Make recommendations on management systems and planning for wildlife populations and habitat, consulting with stakeholders and the public at large to explore options.

Disseminate information by writing reports and scientific papers or journal articles, and by making presentations and giving talks for schools, clubs, interest groups and park interpretive programs.

Top Work Activities

Monitor Processes, Materials, or Surroundings

Getting Information

Interacting with Computers

Top Skills

Active Listening

Science

Reading Comprehension

Top Knowledge

Biology

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 102 | 105 | 2.94 | 3 | 33 | 36 | \$42,330 | \$55,701 | \$62,387 |

Medical Scientists, Except Epidemiologists

19-1042 | Science, Engineering & Mathematics | Investigative | Exceptional Growth

HIGH WAGE | **ADVANCED SKILL**

Alternate Job Title(s): Cancer Researcher; Toxicologist

Occupational Description

Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation or other research, production, technical writing, or related activities. Include medical scientists such as physicians, dentists, public health specialists, pharmacologists, and medical pathologists. Exclude practitioners who provide medical or dental care or dispense drugs.

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct research to develop methodologies, instrumentation and procedures for medical application, analyzing data and presenting findings.

Plan and direct studies to investigate human or animal disease, preventive methods, and treatments for disease.

Follow strict safety procedures when handling toxic materials to avoid contamination.

Evaluate effects of drugs, gases, pesticides, parasites, and microorganisms at various levels.

Teach principles of medicine and medical and laboratory procedures to physicians, residents, students, and technicians.

Top Work Activities

Getting Information

Processing Information

Making Decisions and Solving Problems

Top Skills

Science

Critical Thinking

Reading Comprehension

Top Knowledge

Biology

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|------------------|-------------|
| 63 | 93 | 47.62 | 30 | 13 | 43 | \$41,935 | \$104,641 | \$135,993 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Atmospheric and Space Scientists

19-2021 | Science, Engineering & Mathematics

Investigative

Declining Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Climatologist; Meteorologist; Weather Forecaster

Occupational Description

Investigate atmospheric phenomena and interpret meteorological data gathered by surface and air stations, satellites, and radar to prepare reports and forecasts for public and other uses. Include weather analysts and forecasters whose functions require the detailed knowledge of a meteorologist.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Study and interpret data, reports, maps, photographs, and charts to predict long- and short-range weather conditions, using computer models and knowledge of climate theory, physics, and mathematics.

Broadcast weather conditions, forecasts, and severe weather warnings to the public via television, radio, and the Internet, or provide this information to the news media.

Gather data from sources such as surface and upper air stations, satellites, weather bureaus, and radar for use in meteorological reports and forecasts.

Prepare forecasts and briefings to meet the needs of industry, business, government, and other groups.

Apply meteorological knowledge to problems in areas including agriculture, pollution control, and water management, and to issues such as global warming or ozone depletion.

Top Work Activities

Interacting with Computers

Top Skills

Critical Thinking

Top Knowledge

Geography

Getting Information

Reading Comprehension

Physics

Analyzing Data or Information

Active Listening

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 61 | 59 | -3.28 | 0 | 13 | \$34,309 | \$56,404 | \$67,452 |

Environmental Scientists and Specialists, Including Health

19-2041 | Science, Engineering & Mathematics

Investigative

High Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Environmental Analyst; Water Pollution Specialist

Occupational Description

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

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect, synthesize, analyze, manage, and report environmental data, such as pollution emission measurements, atmospheric monitoring measurements, meteorological and mineralogical information, and soil or water samples.

Analyze data to determine validity, quality, and scientific significance, and to interpret correlations between human activities and environmental effects.

Communicate scientific and technical information to the public, organizations, or internal audiences through oral briefings, written documents, workshops, conferences, training sessions, or public hearings.

Provide scientific and technical guidance, support, coordination, and oversight to governmental agencies, environmental programs, industry, or the public.

Review and implement environmental technical standards, guidelines, policies, and formal regulations that meet all appropriate requirements.

Top Work Activities

Interacting with Computers

Top Skills

Science

Top Knowledge

English Language

Getting Information

Reading Comprehension

Chemistry

Monitor Processes, Materials, or Surroundings

Speaking

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 132 | 148 | 12.12 | 16 | 38 | \$38,203 | \$63,673 | \$76,408 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Market Research Analysts

19-3021 | Business Management, Administration & Finance | Investigative | Exceptional Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Advertising Analyst; Marketing Consultant; Marketing Forecaster

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare reports of findings, illustrating data graphically and translating complex findings into written text.

Seek and provide information to help companies determine their position in the marketplace.

Gather data on competitors and analyze their prices, sales, and method of marketing and distribution.

Collect and analyze data on customer demographics, preferences, needs, and buying habits to identify potential markets and factors affecting product demand.

Devise and evaluate methods and procedures for collecting data, such as surveys, opinion polls, or questionnaires, or arrange to obtain existing data.

Top Work Activities

Analyzing Data or Information

Getting Information

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Complex Problem Solving

Top Knowledge

English Language

Customer and Personal Service

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 178 | 234 | 31.46 | 56 | 48 | 104 | \$37,422 | \$59,895 | \$71,131 |

Clinical, Counseling, and School Psychologists

19-3031 | Healthcare & Human Services | Social | Below Average Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Vocational Psychologist; Child Psychologist

Occupational Description

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.

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Counsel individuals, groups, or families to help them understand problems, define goals, and develop realistic action plans.

Collect information about individuals or clients, using interviews, case histories, observational techniques, and other assessment methods.

Develop therapeutic and treatment plans based on clients' interests, abilities, and needs.

Consult with other professionals to discuss therapies, treatments, counseling resources, or techniques, and to share occupational information.

Analyze data such as interview notes, test results, and reference manuals to identify symptoms and to diagnose the nature of clients' problems.

Top Work Activities

Assisting and Caring for Others

Establishing and Maintaining Interpersonal Relationships

Getting Information

Top Skills

Social Perceptiveness

Active Listening

Speaking

Top Knowledge

Therapy and Counseling

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 280 | 302 | 7.86 | 22 | 79 | 101 | \$31,944 | \$54,418 | \$65,655 |

Agricultural and Food Science Technicians

19-4011 | Natural Resources & Mining

Realistic

Very High Growth

MEDIUM SKILL

Alternate Job Title(s): Inseminator; Feed Research Technician; Dairy Technologist

Occupational Description

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

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Receive and prepare laboratory samples for analysis, following proper protocols to ensure that they will be stored, prepared, and disposed of efficiently and effectively.

Record data pertaining to experimentation, research, and animal care.

Plant seeds in specified areas, and count the resulting plants to determine the percentage of seeds that germinated.

Collect samples from crops or animals so testing can be performed.

Measure or weigh ingredients used in testing or for purposes such as animal feed.

Top Work Activities

Processing Information

Getting Information

Interacting with Computers

Top Skills

Reading Comprehension

Writing

Critical Thinking

Top Knowledge

Mathematics

Biology

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 175 | 203 | 16.00 | 28 | 61 | 89 | N/A | N/A | N/A |

Chemical Technicians

19-4031 | Science, Engineering & Mathematics

Investigative

Very High Growth

MEDIUM SKILL

Alternate Job Title(s): Assayer; Fiber Analyst; Paint Tester

Occupational Description

Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for purposes, such as research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor product quality to ensure compliance to standards and specifications.

Compile and interpret results of tests and analyses.

Set up and conduct chemical experiments, tests, and analyses using techniques such as chromatography, spectroscopy, physical and chemical separation techniques, and microscopy.

Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials.

Provide and maintain a safe work environment by participating in safety programs, committees, or teams, and by conducting laboratory and plant safety audits.

Top Work Activities

Getting Information

Documenting and Recording Information

Analyzing Data or Information

Top Skills

Science

Reading Comprehension

Writing

Top Knowledge

Chemistry

English Language

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 245 | 283 | 15.51 | 38 | 49 | 87 | \$18,111 | \$25,098 | \$28,592 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Forest and Conservation Technicians

19-4093 | Natural Resources & Mining | Realistic | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Grazing Examiner; Soil Tester; Tree Warden

Occupational Description

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

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Keep records of the amount and condition of logs taken to mills.

Manage forest protection activities, including fire control, fire crew training, and coordination of fire detection and public education programs.

Train and lead forest and conservation workers in seasonal activities, such as planting tree seedlings, putting out forest fires and maintaining recreational facilities.

Survey, measure, and map access roads and forest areas such as burns, cut-over areas, experimental plots, and timber sales sections.

Select and mark trees for thinning or logging, drawing detailed plans that include access roads.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Performing General Physical Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Critical Thinking

Active Listening

Reading Comprehension

Top Knowledge

Transportation

English Language

Geography

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 229 | 231 | 0.87 | 2 | 98 | 100 | \$28,442 | \$38,541 | \$43,590 |

Substance Abuse and Behavioral Disorder Counselors

21-1011 | Healthcare & Human Services | Social | High Growth

HIGH SKILL

Alternate Job Title(s): Addiction Counselor; Chemical Dependency Counselor; Drug Counselor

Occupational Description

Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs. Exclude "Social Workers" (21-1021 through 21-1029), "Psychologists" (19-3031 through 19-3039), and "Mental Health Counselors" (21-1014) providing these services.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Complete and maintain accurate records and reports regarding the patients' histories and progress, services provided, and other required information.

Counsel clients and patients, individually and in group sessions, to assist in overcoming dependencies, adjusting to life, and making changes.

Develop client treatment plans based on research, clinical experience, and client histories.

Conduct chemical dependency program orientation sessions.

Participate in case conferences and staff meetings.

Top Work Activities

Assisting and Caring for Others

Communicating with Supervisors, Peers, or Subordinates

Documenting and Recording Information

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Therapy and Counseling

Psychology

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 302 | 340 | 12.58 | 38 | 61 | 99 | \$33,396 | \$41,752 | \$45,930 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Educational, Vocational, and School Counselors

21-1012 | Education & Training | Social | High Growth | **HIGH DEMAND** | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Curriculum Counselor; Guidance Counselor; Educational Adviser

Occupational Description

Counsel individuals and provide group educational and vocational guidance services.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Counsel individuals to help them understand and overcome personal, social, or behavioral problems affecting their educational or vocational situations.

Provide crisis intervention to students when difficult situations occur at schools.

Confer with parents or guardians, teachers, administrators, and other professionals to discuss children's progress, resolve behavioral, academic, and other problems, and to determine priorities for students and their resource needs.

Maintain accurate and complete student records as required by laws, district policies, and administrative regulations.

Prepare students for later educational experiences by encouraging them to explore learning opportunities and to persevere with challenging tasks.

Top Work Activities

Assisting and Caring for Others

Establishing and Maintaining Interpersonal Relationships

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Psychology

Therapy and Counseling

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 690 | 778 | 12.75 | 88 | 140 | 228 | \$33,324 | \$46,472 | \$53,046 |

Marriage and Family Therapists

21-1013 | Healthcare & Human Services | Social | High Growth | **ADVANCED SKILL**

Alternate Job Title(s): Family Counselor; Marriage Counselor

Occupational Description

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

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Ask questions that will help clients identify their feelings and behaviors.

Counsel clients on concerns, such as unsatisfactory relationships, divorce and separation, child rearing, home management, and financial difficulties.

Encourage individuals and family members to develop and use skills and strategies for confronting their problems in a constructive manner.

Maintain case files that include activities, progress notes, evaluations, and recommendations.

Collect information about clients, using techniques such as testing, interviewing, discussion, and observation.

Top Work Activities

Assisting and Caring for Others

Making Decisions and Solving Problems

Getting Information

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Psychology

Therapy and Counseling

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 102 | 115 | 12.75 | 13 | 21 | 34 | \$33,612 | \$40,342 | \$43,707 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Child, Family, and School Social Workers

21-1021 | Healthcare & Human Services | Social | Avg to Above Avg Growth | **HIGH DEMAND** | **HIGH SKILL**

Alternate Job Title(s): Adoption Agent; Child Abuse Worker; Foster Care Worker

Occupational Description

Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist single parents, arrange adoptions, and find foster homes for abandoned or abused children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers on how to deal with problem children.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Counsel individuals, groups, families, or communities regarding issues including mental health, poverty, unemployment, substance abuse, physical abuse, rehabilitation, social adjustment, child care, or medical care.

Interview clients individually, in families, or in groups, assessing their situations, capabilities, and problems, to determine what services are required to meet their needs.

Serve as liaisons between students, homes, schools, family services, child guidance clinics, courts, protective services, doctors, and other contacts, to help children who face problems such as disabilities, abuse, or poverty.

Maintain case history records and prepare reports.

Counsel parents with child rearing problems, interviewing the child and family to determine whether further action is required.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Resolving Conflicts and Negotiating with Others

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Therapy and Counseling

Psychology

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 597 | 663 | 11.06 | 66 | 150 | 216 | \$30,526 | \$39,478 | \$43,954 |

Medical and Public Health Social Workers

21-1022 | Healthcare & Human Services | Social | Very High Growth | **HIGH DEMAND** | **HIGH SKILL**

Alternate Job Title(s): Bereavement Counselor; Hospice Social Worker; Medical Caseworker

Occupational Description

Provide persons, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses, such as Alzheimer's, cancer, or AIDS. Services include advising family care givers, providing patient education and counseling, and making necessary referrals for other social services.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Advocate for clients or patients to resolve crises.

Collaborate with other professionals to evaluate patients' medical or physical condition and to assess client needs.

Refer patient, client, or family to community resources to assist in recovery from mental or physical illness and to provide access to services such as financial assistance, legal aid, housing, job placement or education.

Counsel clients and patients in individual and group sessions to help them overcome dependencies, recover from illness, and adjust to life.

Utilize consultation data and social work experience to plan and coordinate client or patient care and rehabilitation, following through to ensure service efficacy.

Top Work Activities

Getting Information

Establishing and Maintaining Interpersonal Relationships

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Psychology

Therapy and Counseling

Sociology and Anthropology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 408 | 475 | 16.42 | 67 | 102 | 169 | \$28,531 | \$37,353 | \$41,764 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Mental Health and Substance Abuse Social Workers

21-1023 | Healthcare & Human Services | Social | Avg to Above Avg Growth |

ADVANCED SKILL

Alternate Job Title(s): Community Mental Health Worker; Psychiatric Social Worker

Occupational Description

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.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Counsel clients in individual and group sessions to assist them in dealing with substance abuse, mental and physical illness, poverty, unemployment, or physical abuse.

Interview clients, review records, conduct assessments, and confer with other professionals to evaluate the mental or physical condition of client or patient.

Collaborate with counselors, physicians, and nurses to plan and coordinate treatment, drawing on social work experience and patient needs.

Monitor, evaluate, and record client progress with respect to treatment goals.

Educate clients and community members about mental and physical illness, abuse, medication, and available community resources.

Top Work Activities

Assisting and Caring for Others

Establishing and Maintaining Interpersonal Relationships

Getting Information

Top Skills

Social Perceptiveness

Active Listening

Speaking

Top Knowledge

Therapy and Counseling

Psychology

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 403 | 444 | 10.17 | 41 | 101 | 142 | \$28,077 | \$36,499 | \$40,709 |

Probation Officers and Correctional Treatment Specialists

21-1092 | Healthcare & Human Services | Social | Very High Growth |

HIGH SKILL

Alternate Job Title(s): Attendance Officer; Parole Officer

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and maintain case folder for each assigned inmate or offender.

Write reports describing offenders' progress.

Inform offenders or inmates of requirements of conditional release, such as office visits, restitution payments, or educational and employment stipulations.

Discuss with offenders how such issues as drug and alcohol abuse and anger management problems might have played roles in their criminal behavior.

Gather information about offenders' backgrounds by talking to offenders, their families and friends, and other people who have relevant information.

Top Work Activities

Getting Information

Resolving Conflicts and Negotiating with Others

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Social Perceptiveness

Speaking

Active Listening

Top Knowledge

Psychology

Public Safety and Security

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 212 | 247 | 16.51 | 35 | 45 | 80 | \$32,926 | \$42,199 | \$46,836 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Social and Human Service Assistants

21-1093 | Healthcare & Human Services | Conventional | Exceptional Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Case Aide; Home Visitor; Human Services Worker

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Keep records and prepare reports for owner or management concerning visits with clients.
- Submit reports and review reports or problems with superior.
- Interview individuals and family members to compile information on social, educational, criminal, institutional, or drug history.
- Provide information and refer individuals to public or private agencies or community services for assistance.
- Consult with supervisor concerning programs for individual families.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Assisting and Caring for Others
- Getting Information

Top Skills

- Social Perceptiveness
- Service Orientation
- Active Listening

Top Knowledge

- Customer and Personal Service
- Therapy and Counseling
- Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,370 | 1,629 | 18.91 | 259 | 290 | 549 | \$19,489 | \$26,735 | \$30,358 |

Clergy

21-2011 | Healthcare & Human Services | Social | Below Average Growth | **HIGH DEMAND** | **ADVANCED SKILL**

Alternate Job Title(s): Bishop; Parish Priest; Rabbi

Occupational Description

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.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Pray and promote spirituality.
- Read from sacred texts such as the Bible, Torah, or Koran.
- Prepare and deliver sermons and other talks.
- Organize and lead regular religious services.
- Share information about religious issues by writing articles, giving speeches, or teaching.

Top Work Activities

- Establishing and Maintaining Interpersonal Relationships
- Developing Objectives and Strategies
- Assisting and Caring for Others

Top Skills

- Service Orientation
- Active Listening
- Speaking

Top Knowledge

- English Language
- Administration and Management
- Philosophy and Theology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 1,349 | 1,411 | 4.60 | 62 | 267 | 329 | \$23,003 | \$37,591 | \$44,884 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Directors, Religious Activities and Education

21-2021 | Healthcare & Human Services | Enterprising | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Director of Religious Education; Minister of Education; Youth Director

Occupational Description

Direct and coordinate activities of a denominational group to meet religious needs of students. Plan, direct, or coordinate church school programs designed to promote religious education among church membership. May provide counseling and guidance relative to marital, health, financial, and religious problems.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Identify and recruit potential volunteer workers.

Train and supervise religious education instructional staff.

Develop and direct study courses and religious education programs within congregations.

Select appropriate curricula and class structures for educational programs.

Implement program plans by ordering needed materials, scheduling speakers, reserving space, and handling other administrative details.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Judging the Qualities of Things, Services, or People

Getting Information

Top Skills

Speaking

Active Listening

Social Perceptiveness

Top Knowledge

Administration and Management

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 363 | 379 | 4.41 | 16 | 73 | 89 | \$30,055 | \$38,699 | \$43,021 |

Lawyers

23-1011 | Law, Public Safety, Corrections & Security | Enterprising | Below Average Growth

HIGH DEMAND

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Attorney; Real Estate Attorney; Corporate Counsel

Occupational Description

Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, and manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in many areas of law.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Represent clients in court or before government agencies.

Select jurors, argue motions, meet with judges and question witnesses during the course of a trial.

Present evidence to defend clients or prosecute defendants in criminal or civil litigation.

Interpret laws, rulings and regulations for individuals and businesses.

Study Constitution, statutes, decisions, regulations, and ordinances of quasi-judicial bodies to determine ramifications for cases.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Resolving Conflicts and Negotiating with Others

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Law and Government

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,237 | 1,298 | 4.93 | 61 | 231 | 292 | \$49,507 | \$95,062 | \$117,839 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Judges, Magistrate Judges, and Magistrates

23-1023 | Law, Public Safety, Corrections & Security | Enterprising | Declining Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Circuit Court Judge; Jurist; Justice

Occupational Description

Arbitrate, advise, adjudicate, or administer justice in a court of law. May sentence defendant in criminal cases according to government statutes. May determine liability of defendant in civil cases. May issue marriage licenses and perform wedding ceremonies.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Instruct juries on applicable laws, direct juries to deduce the facts from the evidence presented, and hear their verdicts.

Sentence defendants in criminal cases, on conviction by jury, according to applicable government statutes.

Rule on admissibility of evidence and methods of conducting testimony.

Preside over hearings and listen to allegations made by plaintiffs to determine whether the evidence supports the charges.

Read documents on pleadings and motions to ascertain facts and issues.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Performing for or Working Directly with the Public

Top Skills

Active Listening

Critical Thinking

Speaking

Top Knowledge

Law and Government

English Language

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 80 | 78 | -2.50 | 0 | 15 | 15 | \$88,037 | \$105,709 | \$114,545 |

Paralegals and Legal Assistants

23-2011 | Law, Public Safety, Corrections & Security | Conventional | High Growth

MEDIUM SKILL

Alternate Job Title(s): Legal Assistant; Legal Investigator

Occupational Description

Assist lawyers by researching legal precedent, investigating facts, or preparing legal documents. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare affidavits or other documents, such as legal correspondence, and organize and maintain documents in paper or electronic filing system.

Prepare for trial by performing tasks such as organizing exhibits.

Prepare legal documents, including briefs, pleadings, appeals, wills, contracts, and real estate closing statements.

Meet with clients and other professionals to discuss details of case.

File pleadings with court clerk.

Top Work Activities

Interacting with Computers

Getting Information

Organizing, Planning, and Prioritizing Work

Top Skills

Reading Comprehension

Active Listening

Writing

Top Knowledge

English Language

Law and Government

Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 383 | 433 | 13.05 | 50 | 43 | 93 | \$28,484 | \$39,421 | \$44,890 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Court Reporters

23-2091 | Law, Public Safety, Corrections & Security | Conventional | High Growth

MEDIUM SKILL

Alternate Job Title(s): Court Transcriber; Stenocaptioner; Mask Reporter

Occupational Description

Use verbatim methods and equipment to capture, store, retrieve, and transcribe pretrial and trial proceedings or other information. Include stenocaptioners who operate computerized stenographic captioning equipment to provide captions of live or prerecorded broadcasts for hearing-impaired viewers.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Take notes in shorthand or use a stenotype or shorthand machine that prints letters on a paper tape.

Provide transcripts of proceedings upon request of judges, lawyers, or the public.

Record verbatim proceedings of courts, legislative assemblies, committee meetings, and other proceedings, using computerized recording equipment, electronic stenograph machines, or stenomasks.

Transcribe recorded proceedings in accordance with established formats.

Ask speakers to clarify inaudible statements.

Top Work Activities

Documenting and Recording Information

Interacting with Computers

Getting Information

Top Skills

Active Listening

Writing

Reading Comprehension

Top Knowledge

English Language

Clerical

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 93 | 105 | 12.90 | 12 | 14 | \$25,963 | \$40,277 | \$47,434 |

Title Examiners, Abstractors, and Searchers

23-2093 | Business Management, Administration & Finance | Conventional | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Abstract Clerk; Lien Searcher

Occupational Description

Search real estate records, examine titles, or summarize pertinent legal or insurance details for a variety of purposes. May compile lists of mortgages, contracts, and other instruments pertaining to titles by searching public and private records for law firms, real estate agencies, or title insurance companies.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare lists of all legal instruments applying to a specific piece of land and the buildings on it.

Examine documentation such as mortgages, liens, judgments, easements, plat books, maps, contracts, and agreements in order to verify factors such as properties' legal descriptions, ownership, or restrictions.

Read search requests in order to ascertain types of title evidence required and to obtain descriptions of properties and names of involved parties.

Copy or summarize recorded documents, such as mortgages, trust deeds, and contracts, that affect property titles.

Examine individual titles in order to determine if restrictions, such as delinquent taxes, will affect titles and limit property use.

Top Work Activities

Interacting with Computers

Getting Information

Documenting and Recording Information

Top Skills

Speaking

Reading Comprehension

Active Listening

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 205 | 193 | -5.85 | 0 | 30 | \$20,050 | \$31,314 | \$36,947 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Business Teachers, Postsecondary

25-1011 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Accounting Teacher; Marketing Teacher; Shorthand Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and deliver lectures to undergraduate or graduate students on topics such as financial accounting, principles of marketing, and operations management.

Evaluate and grade students' class work, assignments, and papers.

Compile, administer, and grade examinations, or assign this work to others.

Prepare course materials such as syllabi, homework assignments, and handouts.

Maintain student attendance records, grades, and other required records.

Top Work Activities

Training and Teaching Others

Updating and Using Relevant Knowledge

Interpreting the Meaning of Information for Others

Top Skills

Speaking

Reading Comprehension

Writing

Top Knowledge

Education and Training

English Language

Economics and Accounting

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 256 | 306 | 19.53 | 50 | 45 | 95 | \$38,373 | \$69,614 | \$85,235 |

Computer Science Teachers, Postsecondary

25-1021 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): N/A

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, laboratory work, assignments, and papers.

Maintain student attendance records, grades, and other required records.

Prepare and deliver lectures to undergraduate or graduate students on topics such as programming, data structures, and software design.

Prepare course materials such as syllabi, homework assignments, and handouts.

Compile, administer, and grade examinations or assign this work to others.

Top Work Activities

Interacting with Computers

Training and Teaching Others

Updating and Using Relevant Knowledge

Top Skills

Speaking

Instructing

Reading Comprehension

Top Knowledge

Computers and Electronics

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 119 | 141 | 18.49 | 22 | 21 | 43 | \$34,341 | \$53,336 | \$62,834 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Mathematical Science Teachers, Postsecondary

25-1022 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Actuarial Science Teacher; Calculus Teacher; Geometry Teacher

Occupational Description

Teach courses pertaining to mathematical concepts, statistics, and actuarial science and to the application of original and standardized mathematical techniques in solving specific problems and situations. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, assignments, and papers.

Compile, administer, and grade examinations, or assign this work to others.

Prepare and deliver lectures to undergraduate or graduate students on topics such as linear algebra, differential equations, and discrete mathematics.

Prepare course materials such as syllabi, homework assignments, and handouts.

Maintain student attendance records, grades, and other required records.

Top Work Activities

Training and Teaching Others

Thinking Creatively

Interpreting the Meaning of Information for Others

Top Skills

Speaking

Reading Comprehension

Active Listening

Top Knowledge

Mathematics

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 132 | 160 | 21.21 | 28 | 23 | 51 | \$32,530 | \$51,969 | \$61,689 |

Engineering Teachers, Postsecondary

25-1032 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Aeronautics Engineering Teacher; Civil Engineering Teacher; Electrical Engineering Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and deliver lectures to undergraduate or graduate students on topics such as mechanics, hydraulics, and robotics.

Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.

Supervise undergraduate or graduate teaching, internship, and research work.

Evaluate and grade students' class work, laboratory work, assignments, and papers.

Conduct research in a particular field of knowledge and publish findings in professional journals, books, or electronic media.

Top Work Activities

Training and Teaching Others

Interacting with Computers

Thinking Creatively

Top Skills

Instructing

Speaking

Reading Comprehension

Top Knowledge

Mathematics

Engineering and Technology

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 112 | 134 | 19.64 | 22 | 20 | 42 | \$55,691 | \$86,161 | \$101,397 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Agricultural Sciences Teachers, Postsecondary

25-1041 | Education & Training | Social | Exceptional Growth | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Dairy Science Teacher; Farm Management Teacher; Agricultural Soil Conservation Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Prepare course materials such as syllabi, homework assignments, and handouts.
- Evaluate and grade students' class work, laboratory work, assignments, and papers.
- Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.
- Prepare and deliver lectures to undergraduate or graduate students on topics such as crop production, plant genetics, and soil chemistry.
- Initiate, facilitate, and moderate classroom discussions.

Top Work Activities

- Updating and Using Relevant Knowledge
- Analyzing Data or Information
- Making Decisions and Solving Problems

Top Skills

- Speaking
- Instructing
- Reading Comprehension

Top Knowledge

- Education and Training
- English Language
- Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 147 | 177 | 20.41 | 30 | 26 | 56 | \$31,032 | \$56,220 | \$68,814 |

Biological Science Teachers, Postsecondary

25-1042 | Education & Training | Social | Exceptional Growth | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Bacteriology Teacher; Biochemistry Teacher; Genetics Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Prepare and deliver lectures to undergraduate or graduate students on topics such as molecular biology, marine biology, and botany.
- Evaluate and grade students' class work, laboratory work, assignments, and papers.
- Prepare course materials such as syllabi, homework assignments, and handouts.
- Compile, administer, and grade examinations, or assign this work to others.
- Supervise students' laboratory work.

Top Work Activities

- Training and Teaching Others
- Getting Information
- Updating and Using Relevant Knowledge

Top Skills

- Speaking
- Instructing
- Reading Comprehension

Top Knowledge

- Biology
- Education and Training
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 83 | 102 | 22.89 | 19 | 14 | 33 | \$30,536 | \$48,255 | \$57,115 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary

25-1051 | Education & Training

Social

| Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Climatology Teacher; Geology Teacher; Oceanography Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct research in a particular field of knowledge and publish findings in professional journals, books, or electronic media.

Write grant proposals to procure external research funding.

Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.

Supervise undergraduate or graduate teaching, internship, and research work.

Prepare and deliver lectures to undergraduate or graduate students on topics such as structural geology, micrometeorology, and atmospheric thermodynamics.

Top Work Activities

Getting Information

Analyzing Data or Information

Thinking Creatively

Top Skills

Speaking

Reading Comprehension

Writing

Top Knowledge

Mathematics

Physics

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 62 | 75 | 20.97 | 13 | 11 | 24 | \$36,266 | \$66,168 | \$81,119 |

Chemistry Teachers, Postsecondary

25-1052 | Education & Training

Social

| Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Food Technology Teacher; Pharmacognosy Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and deliver lectures to undergraduate or graduate students on topics such as organic chemistry, analytical chemistry, and chemical separation.

Supervise students' laboratory work.

Evaluate and grade students' class work, laboratory performance, assignments, and papers.

Compile, administer, and grade examinations, or assign this work to others.

Maintain student attendance records, grades, and other required records.

Top Work Activities

Training and Teaching Others

Interpreting the Meaning of Information for Others

Making Decisions and Solving Problems

Top Skills

Speaking

Reading Comprehension

Instructing

Top Knowledge

Chemistry

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 73 | 90 | 23.29 | 17 | 13 | 30 | \$31,178 | \$56,442 | \$69,074 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Psychology Teachers, Postsecondary

25-1066 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Child Development Teacher; Human Relations Teacher; Applied Psychology Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and deliver lectures to undergraduate or graduate students on topics such as abnormal psychology, cognitive processes, and work motivation.

Evaluate and grade students' class work, laboratory work, assignments, and papers.

Initiate, facilitate, and moderate classroom discussions.

Compile, administer, and grade examinations, or assign this work to others.

Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.

Top Work Activities

Training and Teaching Others

Top Skills

Speaking

Top Knowledge

Psychology

Getting Information

Instructing

English Language

Updating and Using Relevant Knowledge

Reading Comprehension

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 82 | 100 | 21.95 | 18 | 14 | 32 | \$40,169 | \$64,702 | \$76,969 |

Sociology Teachers, Postsecondary

25-1067 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, assignments, and papers.

Prepare and deliver lectures to undergraduate or graduate students on topics such as race and ethnic relations, measurement and data collection, and workplace social relations.

Initiate, facilitate, and moderate classroom discussions.

Compile, administer, and grade examinations, or assign this work to others.

Prepare course materials such as syllabi, homework assignments, and handouts.

Top Work Activities

Training and Teaching Others

Top Skills

Speaking

Top Knowledge

Sociology and Anthropology

Updating and Using Relevant Knowledge

Reading Comprehension

English Language

Interpreting the Meaning of Information for Others

Instructing

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 57 | 70 | 22.81 | 13 | 10 | 23 | \$32,795 | \$51,370 | \$60,658 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Health Specialties Teachers, Postsecondary

25-1071 | Education & Training | Social | Very High Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Pharmacology Teacher; Dentistry Teacher; Nutrition Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Initiate, facilitate, and moderate classroom discussions.

Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.

Compile, administer, and grade examinations, or assign this work to others.

Evaluate and grade students' class work, assignments, and papers.

Prepare course materials such as syllabi, homework assignments, and handouts.

Top Work Activities

Training and Teaching Others

Updating and Using Relevant Knowledge

Getting Information

Top Skills

Reading Comprehension

Speaking

Instructing

Top Knowledge

Education and Training

Medicine and Dentistry

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 147 | 169 | 14.97 | 22 | 26 | 48 | \$31,561 | \$49,570 | \$58,575 |

Nursing Instructors and Teachers, Postsecondary

25-1072 | Education & Training | Social | Very High Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Registered Nursing Instructor; Practical Nursing Instructor; Nurses Aides Instructors

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Initiate, facilitate, and moderate classroom discussions.

Prepare and deliver lectures to undergraduate or graduate students on topics such as pharmacology, mental health nursing, and community health care practices.

Keep abreast of developments in the field by reading current literature, talking with colleagues, and participating in professional conferences.

Prepare course materials such as syllabi, homework assignments, and handouts.

Supervise students' laboratory and clinical work.

Top Work Activities

Updating and Using Relevant Knowledge

Getting Information

Assisting and Caring for Others

Top Skills

Speaking

Reading Comprehension

Active Listening

Top Knowledge

Education and Training

English Language

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 246 | 288 | 17.07 | 42 | 43 | 85 | \$41,401 | \$56,655 | \$64,282 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Education Teachers, Postsecondary

25-1081 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare course materials such as syllabi, homework assignments, and handouts.

Prepare and deliver lectures to undergraduate or graduate students on topics such as children's literature, learning and development, and reading instruction.

Initiate, facilitate, and moderate classroom discussions.

Evaluate and grade students' class work, assignments, and papers.

Plan, evaluate, and revise curricula, course content, course materials, and methods of instruction.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Getting Information

Training and Teaching Others

Top Skills

Speaking

Reading Comprehension

Active Listening

Top Knowledge

Education and Training

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 209 | 252 | 20.57 | 43 | 36 | 79 | \$38,856 | \$66,195 | \$79,865 |

Art, Drama, and Music Teachers, Postsecondary

25-1121 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Photography Teacher; Piano Teacher; Music Director

Occupational Description

Teach courses in drama, music, and the arts including fine and applied art, such as painting and sculpture, or design and crafts. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, performances, projects, assignments, and papers.

Explain and demonstrate artistic techniques.

Prepare students for performances, exams, or assessments.

Prepare and deliver lectures to undergraduate or graduate students on topics such as acting techniques, fundamentals of music, and art history.

Organize performance groups and direct their rehearsals.

Top Work Activities

Thinking Creatively

Training and Teaching Others

Organizing, Planning, and Prioritizing Work

Top Skills

Speaking

Instructing

Learning Strategies

Top Knowledge

Fine Arts

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 206 | 247 | 19.90 | 41 | 36 | 77 | \$34,208 | \$52,826 | \$62,134 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Communications Teachers, Postsecondary

25-1122 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Journalism Teacher; Public Speaking Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, assignments, and papers.

Prepare course materials such as syllabi, homework assignments, and handouts.

Initiate, facilitate, and moderate classroom discussions.

Prepare and deliver lectures to undergraduate or graduate students on topics such as public speaking, media criticism, and oral traditions.

Compile, administer, and grade examinations, or assign this work to others.

Top Work Activities

Training and Teaching Others

Establishing and Maintaining Interpersonal Relationships

Organizing, Planning, and Prioritizing Work

Top Skills

Speaking

Instructing

Reading Comprehension

Top Knowledge

Education and Training

English Language

Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 70 | 84 | 20.00 | 14 | 12 | 26 | \$33,557 | \$56,015 | \$67,244 |

English Language and Literature Teachers, Postsecondary

25-1123 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Classics Teacher; Etymology Teacher; Creative Writing Teacher

Occupational Description

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

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Initiate, facilitate, and moderate classroom discussions.

Evaluate and grade students' class work, assignments, and papers.

Prepare course materials such as syllabi, homework assignments, and handouts.

Prepare and deliver lectures to undergraduate or graduate students on topics such as poetry, novel structure, and translation and adaptation.

Maintain student attendance records, grades, and other required records.

Top Work Activities

Training and Teaching Others

Thinking Creatively

Interpreting the Meaning of Information for Others

Top Skills

Reading Comprehension

Speaking

Instructing

Top Knowledge

English Language

Education and Training

Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 200 | 240 | 20.00 | 40 | 35 | 75 | \$30,522 | \$48,874 | \$58,051 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Foreign Language and Literature Teachers, Postsecondary

25-1124 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Arabic Teacher; Russian Teacher; Spanish Teacher

Occupational Description

Teach courses in foreign (i.e., other than English) languages and literature. Include both teachers primarily engaged in teaching and those who do a combination of both teaching and research.

Doctoral degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Evaluate and grade students' class work, assignments, and papers.
- Prepare course materials such as syllabi, homework assignments, and handouts.
- Initiate, facilitate, and moderate classroom discussions.
- Maintain student attendance records, grades, and other required records.
- Compile, administer, and grade examinations, or assign this work to others.

Top Work Activities

- Training and Teaching Others
- Thinking Creatively
- Getting Information

Top Skills

- Speaking
- Reading Comprehension
- Instructing

Top Knowledge

- English Language
- Foreign Language
- Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 60 | 72 | 20.00 | 12 | 10 | 22 | \$30,274 | \$50,768 | \$61,014 |

Graduate Teaching Assistants

25-1191 | Education & Training | Social | Exceptional Growth

HIGH DEMAND

HIGH SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Lead discussion sections, tutorials, and laboratory sections.
- Evaluate and grade examinations, assignments, and papers, and record grades.
- Return assignments to students in accordance with established deadlines.
- Schedule and maintain regular office hours to meet with students.
- Inform students of the procedures for completing and submitting class work such as lab reports.

Top Work Activities

- Interpreting the Meaning of Information for Others
- Thinking Creatively
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Reading Comprehension
- Active Listening
- Speaking

Top Knowledge

- Education and Training
- English Language
- Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 996 | 1,192 | 19.68 | 196 | 173 | 369 | \$22,317 | \$40,604 | \$49,748 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Recreation and Fitness Studies Teachers, Postsecondary

25-1193 | Education & Training | Social | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Swimming Teacher; Leisure Studies Instructor

Occupational Description

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

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Evaluate and grade students' class work, assignments, and papers.

Maintain student attendance records, grades, and other required records.

Prepare and deliver lectures to undergraduate or graduate students on topics such as anatomy, therapeutic recreation, and conditioning theory.

Prepare course materials such as syllabi, homework assignments, and handouts.

Compile, administer, and grade examinations, or assign this work to others.

Top Work Activities

Training and Teaching Others

Coaching and Developing Others

Updating and Using Relevant Knowledge

Top Skills

Speaking

Instructing

Reading Comprehension

Top Knowledge

Education and Training

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 50 | 60 | 20.00 | 10 | 9 | 19 | \$36,207 | \$51,492 | \$59,135 |

Vocational Education Teachers, Postsecondary

25-1194 | Education & Training | Social | Very High Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): Real Estate Instructor; Auto Mechanics Teacher; Barbering Teacher

Occupational Description

Teach or instruct vocational or occupational subjects at the postsecondary level (but at less than the baccalaureate) to students who have graduated or left high school. Include correspondence school instructors; industrial, commercial and government training instructors; and adult education teachers and instructors who prepare persons to operate industrial machinery and equipment and transportation and communications equipment. Teaching may take place in public or private schools whose primary business is education or in a school associated with an organization whose primary business is other than education.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Supervise and monitor students' use of tools and equipment.

Observe and evaluate students' work to determine progress, provide feedback, and make suggestions for improvement.

Present lectures and conduct discussions to increase students' knowledge and competence using visual aids, such as graphs, charts, videotapes, and slides.

Administer oral, written, or performance tests to measure progress and to evaluate training effectiveness.

Prepare reports and maintain records such as student grades, attendance rolls, and training activity details.

Top Work Activities

Training and Teaching Others

Updating and Using Relevant Knowledge

Making Decisions and Solving Problems

Top Skills

Instructing

Speaking

Learning Strategies

Top Knowledge

Education and Training

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 237 | 280 | 18.14 | 43 | 41 | 84 | \$30,775 | \$47,085 | \$55,240 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Preschool Teachers, Except Special Education

25-2011 | Education & Training

Social

Very High Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Head Start Teacher; Childhood Development Teacher; Nursery School Teacher

Occupational Description

Instruct children (normally up to 5 years of age) in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. May be required to hold State certification. Exclude "Child Care Workers" (39-9011) and "Special Education Teachers" (25-2041 through 25-2043).

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Establish and enforce rules for behavior, and procedures for maintaining order.

Organize and lead activities designed to promote physical, mental and social development, such as games, arts and crafts, music, storytelling, and field trips.

Teach basic skills such as color, shape, number and letter recognition, personal hygiene, and social skills.

Read books to entire classes or to small groups.

Observe and evaluate children's performance, behavior, social development, and physical health.

Top Work Activities

Thinking Creatively

Assisting and Caring for Others

Establishing and Maintaining Interpersonal Relationships

Top Skills

Speaking

Learning Strategies

Instructing

Top Knowledge

Customer and Personal Service

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 526 | 606 | 15.21 | 80 | 105 | 185 | \$19,187 | \$25,715 | \$28,979 |

Kindergarten Teachers, Except Special Education

25-2012 | Education & Training

Social

Below Average Growth

HIGH SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Instruct students individually and in groups, adapting teaching methods to meet students' varying needs and interests.

Teach basic skills such as color, shape, number and letter recognition, personal hygiene, and social skills.

Observe and evaluate children's performance, behavior, social development, and physical health.

Establish and enforce rules for behavior, and policies and procedures to maintain order among students.

Demonstrate activities to children.

Top Work Activities

Thinking Creatively

Training and Teaching Others

Establishing and Maintaining Interpersonal Relationships

Top Skills

Instructing

Active Listening

Speaking

Top Knowledge

Education and Training

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 463 | 501 | 8.21 | 38 | 93 | 131 | \$29,199 | \$38,885 | \$43,728 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Elementary School Teachers, Except Special Education

25-2021 | Education & Training | Social | Below Average Growth | **HIGH DEMAND** | **HIGH SKILL**

Alternate Job Title(s): N/A

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Instruct students individually and in groups, using various teaching methods such as lectures, discussions, and demonstrations.

Adapt teaching methods and instructional materials to meet students' varying needs and interests.

Establish clear objectives for all lessons, units, and projects and communicate those objectives to students.

Establish and enforce rules for behavior and procedures for maintaining order among the students for whom they are responsible.

Meet with parents and guardians to discuss their children's progress and to determine priorities for their children and their resource needs.

Top Work Activities

Training and Teaching Others

Thinking Creatively

Organizing, Planning, and Prioritizing Work

Top Skills

Speaking

Instructing

Learning Strategies

Top Knowledge

Education and Training

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 5,480 | 5,961 | 8.78 | 481 | 1,246 | 1,727 | \$32,225 | \$42,875 | \$48,200 |

Secondary School Teachers, Except Special and Vocational Education

25-2031 | Education & Training | Social | Below Average Growth | **HIGH DEMAND** | **HIGH SKILL**

Alternate Job Title(s): High School Teacher

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Establish and enforce rules for behavior and procedures for maintaining order among students.

Instruct through lectures, discussions, and demonstrations in one or more subjects, such as English, mathematics, or social studies.

Adapt teaching methods and instructional materials to meet students' varying needs and interests.

Maintain accurate and complete student records as required by laws, district policies, and administrative regulations.

Enforce all administration policies and rules governing students.

Top Work Activities

Training and Teaching Others

Organizing, Planning, and Prioritizing Work

Getting Information

Top Skills

Learning Strategies

Instructing

Speaking

Top Knowledge

Education and Training

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 2,818 | 2,878 | 2.13 | 60 | 819 | 879 | \$31,216 | \$41,306 | \$46,352 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Vocational Education Teachers, Secondary School

| | | | | | | | | |
|--|----------------------|-----------------------|----------------------|-------------------------------|-------------------|----------|-----------------|-------------|
| 25-2032 | Education & Training | Social | Below Average Growth | HIGH DEMAND | HIGH SKILL | | | |
| Alternate Job Title(s): N/A | | | | | | | | |
| Occupational Description | | | | | | | | |
| Teach or instruct vocational or occupational subjects at the secondary school level. | | | | | | | | |
| Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation. | | | | | | | | |
| Top Core Tasks | | | | | | | | |
| Observe and evaluate students' performance, behavior, social development, and physical health. | | | | | | | | |
| Prepare materials and classroom for class activities. | | | | | | | | |
| Maintain accurate and complete student records as required by law, district policy, and administrative regulations. | | | | | | | | |
| Establish and enforce rules for behavior and procedures for maintaining order among students. | | | | | | | | |
| Instruct and monitor students in the use and care of equipment and materials to prevent injury and damage. | | | | | | | | |
| Top Work Activities | | Top Skills | | Top Knowledge | | | | |
| Training and Teaching Others | | Instructing | | Education and Training | | | | |
| Communicating with Supervisors, Peers, or Subordinates | | Reading Comprehension | | English Language | | | | |
| Organizing, Planning, and Prioritizing Work | | Active Listening | | Administration and Management | | | | |
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
| 535 | 548 | 2.43 | 13 | 155 | 168 | \$30,481 | \$42,750 | \$48,884 |

Special Education Teachers, Preschool, Kindergarten, and Elementary School

| | | | | | | | | |
|---|----------------------|---------------------|-------------------------|------------------------|-------------------|----------|-----------------|-------------|
| 25-2041 | Education & Training | Social | Avg to Above Avg Growth | HIGH DEMAND | HIGH SKILL | | | |
| Alternate Job Title(s): N/A | | | | | | | | |
| Occupational Description | | | | | | | | |
| Teach elementary and preschool school subjects to educationally and physically handicapped students. Include teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired. | | | | | | | | |
| Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation. | | | | | | | | |
| Top Core Tasks | | | | | | | | |
| Instruct students in academic subjects using a variety of techniques such as phonetics, multisensory learning, and repetition to reinforce learning and to meet students' varying needs and interests. | | | | | | | | |
| Teach socially acceptable behavior, employing techniques such as behavior modification and positive reinforcement. | | | | | | | | |
| Employ special educational strategies and techniques during instruction to improve the development of sensory- and perceptual-motor skills, language, cognition, and memory. | | | | | | | | |
| Confer with parents, administrators, testing specialists, social workers, and professionals to develop individual educational plans designed to promote students' educational, physical, and social development. | | | | | | | | |
| Modify the general education curriculum for special-needs students based upon a variety of instructional techniques and technologies. | | | | | | | | |
| Top Work Activities | | Top Skills | | Top Knowledge | | | | |
| Training and Teaching Others | | Learning Strategies | | English Language | | | | |
| Getting Information | | Instructing | | Education and Training | | | | |
| Developing Objectives and Strategies | | Speaking | | Psychology | | | | |
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
| 805 | 893 | 10.93 | 88 | 209 | 297 | \$34,436 | \$44,641 | \$49,744 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Special Education Teachers, Secondary School

25-2043 | Education & Training | Social | Below Average Growth

HIGH WAGE **HIGH SKILL**

Alternate Job Title(s): N/A

Occupational Description

Teach secondary school subjects to educationally and physically handicapped students. Include teachers who specialize and work with audibly and visually handicapped students and those who teach basic academic and life processes skills to the mentally impaired.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Establish and enforce rules for behavior and policies and procedures to maintain order among students.
- Teach socially acceptable behavior, employing techniques such as behavior modification and positive reinforcement.
- Modify the general education curriculum for special-needs students, based upon a variety of instructional techniques and technologies.
- Develop and implement strategies to meet the needs of students with a variety of handicapping conditions.
- Maintain accurate and complete student records, and prepare reports on children and activities, as required by laws, district policies, and administrative regulations.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Evaluating Information to Determine Compliance with Standards
- Establishing and Maintaining Interpersonal Relationships

Top Skills

- Learning Strategies
- Instructing
- Active Listening

Top Knowledge

- English Language
- Education and Training
- Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 398 | 422 | 6.03 | 24 | 103 | 127 | \$34,281 | \$44,949 | \$50,282 |

Adult Literacy, Remedial Education, and GED Teachers and Instructors

25-3011 | Education & Training | Social | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Adult Education Teacher

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Adapt teaching methods and instructional materials to meet students' varying needs, abilities, and interests.
- Maintain accurate and complete student records as required by laws or administrative policies.
- Assign and grade class work and homework.
- Prepare and administer written, oral, and performance tests, and issue grades in accordance with performance.
- Observe and evaluate students' work to determine progress and make suggestions for improvement.

Top Work Activities

- Training and Teaching Others
- Interpreting the Meaning of Information for Others
- Getting Information

Top Skills

- Instructing
- Speaking
- Active Listening

Top Knowledge

- English Language
- Education and Training
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 132 | 144 | 9.09 | 12 | 20 | 32 | \$32,700 | \$40,886 | \$44,979 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Self-Enrichment Education Teachers

25-3021 | Education & Training

Social

Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Art Teacher; Flying Teacher; Citizenship Teacher

Occupational Description

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.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adapt teaching methods and instructional materials to meet students' varying needs and interests.

Conduct classes, workshops, and demonstrations, and provide individual instruction to teach topics and skills such as cooking, dancing, writing, physical fitness, photography, personal finance, and flying.

Monitor students' performance to make suggestions for improvement and to ensure that they satisfy course standards, training requirements, and objectives.

Observe students to determine qualifications, limitations, abilities, interests, and other individual characteristics.

Instruct students individually and in groups, using various teaching methods such as lectures, discussions, and demonstrations.

Top Work Activities

Training and Teaching Others

Coaching and Developing Others

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Education and Training

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 172 | 213 | 23.84 | 41 | 26 | 67 | \$15,181 | \$26,285 | \$31,837 |

Farm and Home Management Advisors

25-9021 | Education & Training

Social

Declining Growth

HIGH SKILL

Alternate Job Title(s): Agricultural Extension Agent; Feed Adviser; Home Economic Extension Worker

Occupational Description

Advise, instruct, and assist individuals and families engaged in agriculture, agricultural-related processes, or home economics activities.

Demonstrate procedures and apply research findings to solve problems; instruct and train in product development, sales, and the utilization of machinery and equipment to promote general welfare. Include county agricultural agents, feed and farm management advisers, home economists, and extension service advisers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collaborate with producers in order to diagnose and prevent management and production problems.

Conduct classes or deliver lectures on subjects such as nutrition, home management, and farming techniques.

Advise farmers and demonstrate techniques in areas such as feeding and health maintenance of livestock, growing and harvesting practices, and financial planning.

Research information requested by farmers.

Prepare and distribute leaflets, pamphlets, and visual aids for educational and informational purposes.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Training and Teaching Others

Communicating with Persons Outside Organization

Top Skills

Active Listening

Speaking

Learning Strategies

Top Knowledge

Education and Training

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 131 | 128 | -2.29 | 0 | 29 | 29 | \$27,348 | \$41,624 | \$48,762 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Instructional Coordinators

25-9031 | Education & Training

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Curriculum Specialist; Director of Instructional Materials; Educational Consultant

Occupational Description

Develop instructional material, coordinate educational content, and incorporate current technology in specialized fields that provide guidelines to educators and instructors for developing curricula and conducting courses. Include educational consultants and specialists, and instructional material directors.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan and conduct teacher training programs and conferences dealing with new classroom procedures, instructional materials and equipment, and teaching aids.

Observe work of teaching staff to evaluate performance, and to recommend changes that could strengthen teaching skills.

Confer with members of educational committees and advisory groups to obtain knowledge of subject areas, and to relate curriculum materials to specific subjects, individual student needs, and occupational areas.

Research, evaluate, and prepare recommendations on curricula, instructional methods, and materials for school systems.

Conduct or participate in workshops, committees, and conferences designed to promote the intellectual, social, and physical welfare of students.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Top Knowledge

Education and Training

Training and Teaching Others

Speaking

English Language

Getting Information

Writing

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 248 | 302 | 21.77 | 54 | 55 | 109 | \$30,481 | \$54,281 | \$66,181 |

Art Directors

27-1011 | Arts, A/V Technology & Communications

Artistic

Below Average Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Formulate basic layout design or presentation approach and specify material details, such as style and size of type, photographs, graphics, animation, video, and sound.

Review and approve art materials, copy materials, and proofs of printed copy developed by staff members.

Manage own accounts and projects, working within budget and scheduling requirements.

Confer with creative, art, copywriting, or production department heads to discuss client requirements and presentation concepts and to coordinate creative activities.

Present final layouts to clients for approval.

Top Work Activities

Thinking Creatively

Top Skills

Active Listening

Top Knowledge

Design

Interacting with Computers

Speaking

Administration and Management

Making Decisions and Solving Problems

Coordination

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 69 | 74 | 7.25 | 5 | 15 | 20 | \$34,715 | \$70,476 | \$88,356 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Craft Artists

27-1012 | Arts, AV Technology & Communications | Artistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Architectural Modeler; Furniture Reproducer; Ivory Carver

Occupational Description

Create or reproduce hand-made objects for sale and exhibition using a variety of techniques, such as welding, weaving, pottery, and needlecraft.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Create functional or decorative objects by hand, using a variety of methods and materials.

Cut, shape, fit, join, mold, or otherwise process materials, using hand tools, power tools, and/or machinery.

Attend craft shows to market products.

Select materials for use based on strength, color, texture, balance, weight, size, malleability and other characteristics.

Apply finishes to objects being crafted.

Top Work Activities

Thinking Creatively

Handling and Moving Objects

Performing for or Working Directly with the Public

Top Skills

Critical Thinking

Social Perceptiveness

Complex Problem Solving

Top Knowledge

Fine Arts

Sales and Marketing

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 55 | 69 | 25.45 | 14 | 12 | 26 | \$17,633 | \$32,809 | \$40,397 |

Multi-Media Artists and Animators

27-1014 | Arts, AV Technology & Communications | Artistic | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Computer Artist; Computer Graphics Illustrator; Special Effects Specialist

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Create two-dimensional and three-dimensional images depicting objects in motion or illustrating a process, using computer animation or modeling programs.

Design complex graphics and animation, using independent judgment, creativity, and computer equipment.

Make objects or characters appear lifelike by manipulating light, color, texture, shadow, and transparency, or manipulating static images to give the illusion of motion.

Apply story development, directing, cinematography, and editing to animation to create storyboards that show the flow of the animation and map out key scenes and characters.

Participate in design and production of multimedia campaigns, handling budgeting and scheduling, and assisting with such responsibilities as production coordination, background design and progress tracking.

Top Work Activities

Interacting with Computers

Thinking Creatively

Updating and Using Relevant Knowledge

Top Skills

Active Listening

Reading Comprehension

Critical Thinking

Top Knowledge

Communications and Media

Design

Fine Arts

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 65 | 69 | 6.15 | 4 | 15 | 19 | \$24,388 | \$34,347 | \$39,326 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Floral Designers

27-1023 | Arts, AV Technology & Communications | Artistic | Declining Growth

SOME SKILL

Alternate Job Title(s): Corsage Maker; Florist; Flower Arranger

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with clients regarding price and type of arrangement desired and the date, time, and place of delivery.

Plan arrangement according to client's requirements, utilizing knowledge of design and properties of materials, or select appropriate standard design pattern.

Water plants, and cut, condition, and clean flowers and foliage for storage.

Select flora and foliage for arrangements, working with numerous combinations to synthesize and develop new creations.

Order and purchase flowers and supplies from wholesalers and growers.

Top Work Activities

Organizing, Planning, and Prioritizing Work

Getting Information

Thinking Creatively

Top Skills

Active Listening

Speaking

Time Management

Top Knowledge

Customer and Personal Service

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 243 | 241 | -0.82 | 0 | 75 | 75 | \$16,560 | \$20,633 | \$22,670 |

Graphic Designers

27-1024 | Arts, AV Technology & Communications | Artistic | Below Average Growth

HIGH DEMAND

HIGH SKILL

Alternate Job Title(s): Catalogue Illustrator; Graphic Artist; Layout Artist

Occupational Description

Design or create graphics to meet a client's specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Create designs, concepts, and sample layouts based on knowledge of layout principles and esthetic design concepts.

Determine size and arrangement of illustrative material and copy, and select style and size of type.

Confer with clients to discuss and determine layout design.

Develop graphics and layouts for product illustrations, company logos, and Internet websites.

Review final layouts and suggest improvements as needed.

Top Work Activities

Thinking Creatively

Interacting with Computers

Getting Information

Top Skills

Active Listening

Writing

Speaking

Top Knowledge

Design

Communications and Media

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 624 | 678 | 8.65 | 54 | 192 | 246 | \$25,627 | \$33,626 | \$37,626 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Interior Designers

27-1025 | Arts, AV Technology & Communications | Artistic | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): Decorator; Furniture Arranger; Home Lighting Adviser

Occupational Description

Plan, design, and furnish interiors of residential, commercial, or industrial buildings. Formulate design which is practical, aesthetic, and conducive to intended purposes, such as raising productivity, selling merchandise, or improving life style. May specialize in a particular field, style, or phase of interior design. Exclude "Merchandise Displayers and Window Trimmers" (27-1026).

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with client to determine factors affecting planning interior environments, such as budget, architectural preferences, and purpose and function.

Advise client on interior design factors such as space planning, layout and utilization of furnishings or equipment, and color coordination.

Coordinate with other professionals, such as contractors, architects, engineers, and plumbers, to ensure job success.

Review and detail shop drawings for construction plans.

Estimate material requirements and costs, and present design to client for approval.

Top Work Activities

Getting Information

Thinking Creatively

Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Design

Customer and Personal Service

Building and Construction

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 105 | 112 | 6.67 | 7 | 32 | 39 | \$29,852 | \$38,988 | \$43,556 |

Merchandise Displayers and Window Trimmers

27-1026 | Arts, AV Technology & Communications | Artistic | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Mannequin Decorator; Display Artist; Model Dresser

Occupational Description

Plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Take photographs of displays and signage.

Plan commercial displays to entice and appeal to customers.

Place prices and descriptive signs on backdrops, fixtures, merchandise, or floor.

Change or rotate window displays, interior display areas, and signage to reflect changes in inventory or promotion.

Obtain plans from display designers or display managers, and discuss their implementation with clients or supervisors.

Top Work Activities

Handling and Moving Objects

Getting Information

Organizing, Planning, and Prioritizing Work

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Customer and Personal Service

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 232 | 238 | 2.59 | 6 | 71 | 77 | \$18,001 | \$25,500 | \$29,250 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Producers and Directors

27-2012 | Arts, A/V Technology & Communications | Enterprising | Below Average Growth

HIGH SKILL

Alternate Job Title(s): Independent Film Maker; Stage Manager; Program Arranger

Occupational Description

Produce or direct stage, television, radio, video, or motion picture productions for entertainment, information, or instruction. Responsible for creative decisions, such as interpretation of script, choice of guests, set design, sound, special effects, and choreography.

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Coordinate the activities of writers, directors, managers, and other personnel throughout the production process.

Monitor postproduction processes to ensure accurate completion of details.

Perform management activities such as budgeting, scheduling, planning, and marketing.

Determine production size, content, and budget, establishing details such as production schedules and management policies.

Compose and edit scripts or provide screenwriters with story outlines from which scripts can be written.

Top Work Activities

Getting Information

Establishing and Maintaining Interpersonal Relationships

Interacting with Computers

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

English Language

Communications and Media

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 94 | 96 | 2.13 | 2 | 29 | 31 | \$29,238 | \$39,033 | \$43,931 |

Coaches and Scouts

27-2022 | Marketing, Sales, Service & Tourism | Social | Exceptional Growth

HIGH DEMAND

HIGH SKILL

Alternate Job Title(s): Boxing Trainer; Horse Trainer; Baseball Club Manager

Occupational Description

Instruct or coach groups or individuals in the fundamentals of sports. Demonstrate techniques and methods of participation. May evaluate athletes' strengths and weaknesses as possible recruits or to improve the athletes' technique to prepare them for competition. Those required to hold teaching degrees should be reported in the appropriate teaching category. Exclude "Athletic Trainers" (29-9091).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan, organize, and conduct practice sessions.

Provide training direction, encouragement, and motivation in order to prepare athletes for games, competitive events, and/or tours.

Identify and recruit potential athletes, arranging and offering incentives such as athletic scholarships.

Plan strategies and choose team members for individual games or sports seasons.

Plan and direct physical conditioning programs that will enable athletes to achieve maximum performance.

Top Work Activities

Coaching and Developing Others

Coordinating the Work and Activities of Others

Developing and Building Teams

Top Skills

Instructing

Speaking

Management of Personnel Resources

Top Knowledge

Education and Training

Psychology

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 584 | 730 | 25.00 | 146 | 112 | 258 | \$15,878 | \$29,068 | \$35,662 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Music Directors and Composers

27-2041 | Arts, AV Technology & Communications | Artistic | Declining Growth

HIGH SKILL

Alternate Job Title(s): Choirmaster; Orchestra Conductor

Occupational Description

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

Bachelor's degree or higher, plus work experience is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Use gestures to shape the music being played, communicating desired tempo, phrasing, tone, color, pitch, volume, and other performance aspects.

Direct groups at rehearsals and live or recorded performances in order to achieve desired effects such as tonal and harmonic balance dynamics, rhythm, and tempo.

Plan and schedule rehearsals and performances, and arrange details such as locations, accompanists, and instrumentalists.

Consider such factors as ensemble size and abilities, availability of scores, and the need for musical variety, in order to select music to be performed.

Study scores to learn the music in detail, and to develop interpretations.

Top Work Activities

Thinking Creatively

Establishing and Maintaining Interpersonal Relationships

Performing for or Working Directly with the Public

Top Skills

Instructing

Judgment and Decision Making

Active Listening

Top Knowledge

Fine Arts

Education and Training

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 55 | 54 | -1.82 | 0 | 11 | 11 | \$30,873 | \$43,997 | \$50,559 |

Musicians and Singers

27-2042 | Arts, AV Technology & Communications | Artistic | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Cantor; Church Organist; Instrumentalist

Occupational Description

Play one or more musical instruments or entertain by singing songs in recital, in accompaniment, or as a member of an orchestra, band, or other musical group. Musical performers may entertain on-stage, radio, TV, film, video, or record in studios. Exclude "Dancers" (27-2031).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Practice musical instrument performances, individually or in rehearsal with other musicians, to master individual pieces of music and to maintain and improve skills.

Perform before live audiences.

Specialize in playing a specific family of instruments and/or a particular type of music.

Play musical instruments as soloists, or as members or guest artists of musical groups such as orchestras, ensembles, or bands.

Play from memory or by following scores.

Top Work Activities

Performing for or Working Directly with the Public

Establishing and Maintaining Interpersonal Relationships

Thinking Creatively

Top Skills

Active Listening

Coordination

Social Perceptiveness

Top Knowledge

Fine Arts

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 547 | 571 | 4.39 | 24 | 110 | 134 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Radio and Television Announcers

27-3011 | Arts, A/V Technology & Communications

Artistic

Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Broadcaster; Radio Disk Jockey

Occupational Description

Talk on radio or television. May interview guests, act as master of ceremonies, read news flashes, identify station by giving call letters, or announce song title and artist.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and deliver news, sports, and/or weather reports, gathering and rewriting material so that it will convey required information and fit specific time slots.

Read news flashes to inform audiences of important events.

Identify stations, and introduce or close shows, using memorized or read scripts, and/or ad-libs.

Select program content, in conjunction with producers and assistants, based on factors such as program specialties, audience tastes, or requests from the public.

Study background information in order to prepare for programs or interviews.

Top Work Activities

Thinking Creatively

Getting Information

Communicating with Persons Outside Organization

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Communications and Media

English Language

Telecommunications

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 412 | 344 | -16.51 | 0 | 116 | 116 | \$17,901 | \$30,623 | \$36,984 |

Public Address System and Other Announcers

27-3012 | Arts, A/V Technology & Communications

Social

Below Average Growth

SOME SKILL

Alternate Job Title(s): Ringmaster; Train Caller

Occupational Description

Make announcements over loud speaker at sporting or other public events. May act as master of ceremonies or disc jockey at weddings, parties, clubs, or other gathering places.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Greet attendees and serve as masters of ceremonies at banquets, store openings, and other events.

Preview any music intended to be broadcast over the public address system.

Inform patrons of coming events at a specific venue.

Meet with event directors in order to review schedules and exchange information about details, such as national anthem performers and starting lineups.

Announce programs and player substitutions or other changes to patrons.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Persons Outside Organization

Establishing and Maintaining Interpersonal Relationships

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Customer and Personal Service

Sales and Marketing

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 79 | 86 | 8.86 | 7 | 22 | 29 | \$18,954 | \$26,094 | \$29,664 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Reporters and Correspondents

27-3022 | Arts, AV Technology & Communications | Artistic | Declining Growth

HIGH SKILL

Alternate Job Title(s): Columnist; Critic; Foreign Correspondent

Occupational Description

Collect and analyze facts about newsworthy events by interview, investigation, or observation. Report and write stories for newspaper, news magazine, radio, or television. Exclude "Broadcast News Analysts" (27-3021).

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Report and write news stories for publication or broadcast, describing the background and details of events.

Arrange interviews with people who can provide information about a particular story.

Review copy and correct errors in content, grammar, and punctuation, following prescribed editorial style and formatting guidelines.

Review and evaluate notes taken about event aspects in order to isolate pertinent facts and details.

Determine a story's emphasis, length, and format, and organize material accordingly.

Top Work Activities

Getting Information

Communicating with Persons Outside Organization

Interpreting the Meaning of Information for Others

Top Skills

Active Listening

Writing

Speaking

Top Knowledge

English Language

Communications and Media

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 253 | 231 | -8.70 | 0 | 69 | 69 | \$17,341 | \$26,447 | \$30,999 |

Public Relations Specialists

27-3031 | Arts, AV Technology & Communications | Enterprising | Exceptional Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Lobbyist; Press Secretary; Publicist

Occupational Description

Engage in promoting or creating good will for individuals, groups, or organizations by writing or selecting favorable publicity material and releasing it through various communications media. May prepare and arrange displays, and make speeches.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Respond to requests for information from the media or designate another appropriate spokesperson or information source.

Study the objectives, promotional policies and needs of organizations to develop public relations strategies that will influence public opinion or promote ideas, products and services.

Plan and direct development and communication of informational programs to maintain favorable public and stockholder perceptions of an organization's accomplishments and agenda.

Establish and maintain cooperative relationships with representatives of community, consumer, employee, and public interest groups.

Prepare or edit organizational publications for internal and external audiences, including employee newsletters and stockholders' reports.

Top Work Activities

Communicating with Persons Outside Organization

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Speaking

Active Listening

Critical Thinking

Top Knowledge

Communications and Media

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 482 | 583 | 20.95 | 101 | 114 | 215 | \$32,521 | \$46,125 | \$52,927 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Editors

27-3041 | Arts, AV Technology & Communications | Artistic | Declining Growth

HIGH SKILL

Alternate Job Title(s): Copy Editor; Censor; Reviewer

Occupational Description

Perform variety of editorial duties, such as laying out, indexing, and revising content of written materials, in preparation for final publication. Include technical editors.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare, rewrite and edit copy to improve readability, or supervise others who do this work.

Verify facts, dates, and statistics, using standard reference sources.

Read copy or proof to detect and correct errors in spelling, punctuation, and syntax.

Develop story or content ideas, considering reader or audience appeal.

Review and approve proofs submitted by composing room prior to publication production.

Top Work Activities

Getting Information

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Writing

Active Listening

Top Knowledge

English Language

Communications and Media

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 205 | 200 | -2.44 | 0 | 54 | 54 | \$21,567 | \$39,074 | \$47,828 |

Technical Writers

27-3042 | Arts, AV Technology & Communications | Artistic | High Growth

HIGH SKILL

Alternate Job Title(s): Documentation Writer; Assembly Instructions Writer; Specifications Writer

Occupational Description

Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Organize material and complete writing assignment according to set standards regarding order, clarity, conciseness, style, and terminology.

Maintain records and files of work and revisions.

Edit, standardize, or make changes to material prepared by other writers or establishment personnel.

Confer with customer representatives, vendors, plant executives, or publisher to establish technical specifications and to determine subject material to be developed for publication.

Review published materials and recommend revisions or changes in scope, format, content, and methods of reproduction and binding.

Top Work Activities

Getting Information

Interacting with Computers

Documenting and Recording Information

Top Skills

Writing

Reading Comprehension

Active Listening

Top Knowledge

English Language

Computers and Electronics

Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 52 | 59 | 13.46 | 7 | 8 | 15 | \$30,046 | \$44,690 | \$52,012 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Writers and Authors

27-3043 | Arts, AV Technology & Communications | Enterprising | Avg to Above Avg Growth |

HIGH SKILL

Alternate Job Title(s): Crossword Puzzle Maker; Copy Writer; Playwright

Occupational Description

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

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Write to customers in their terms and on their level so that the advertiser's sales message is more readily received.

Discuss with the client the product, advertising themes and methods, and any changes that should be made in advertising copy.

Write advertising copy for use by publication, broadcast or internet media to promote the sale of goods and services.

Present drafts and ideas to clients.

Vary language and tone of messages based on product and medium.

Top Work Activities

Thinking Creatively

Getting Information

Communicating with Persons Outside Organization

Top Skills

Reading Comprehension

Writing

Active Listening

Top Knowledge

English Language

Communications and Media

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 142 | 158 | 11.27 | 16 | 30 | 46 | \$22,996 | \$32,561 | \$37,344 |

Audio and Video Equipment Technicians

27-4011 | Arts, AV Technology & Communications | Realistic | Very High Growth |

MEDIUM SKILL

Alternate Job Title(s): Video Control Operator; Audio Visual Production Specialist

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Install, adjust, and operate electronic equipment to record, edit, and transmit radio and television programs, motion pictures, video conferencing, or multimedia presentations.

Diagnose and resolve media system problems.

Switch sources of video input from one camera or studio to another, from film to live programming, or from network to local programming.

Mix and regulate sound inputs and feeds, or coordinate audio feeds with television pictures.

Compress, digitize, duplicate, and store audio and video data.

Top Work Activities

Interacting with Computers

Identifying Objects, Actions, and Events

Getting Information

Top Skills

Reading Comprehension

Critical Thinking

Monitoring

Top Knowledge

Computers and Electronics

Communications and Media

Telecommunications

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 62 | 73 | 17.74 | 11 | 19 | 30 | \$19,740 | \$28,346 | \$32,649 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Broadcast Technicians

27-4012 | Arts, AV Technology & Communications | Realistic | Declining Growth |

MEDIUM SKILL

Alternate Job Title(s): Control Room Technician; Audio Engineer

Occupational Description

Set up, operate, and maintain the electronic equipment used to transmit radio and television programs. Control audio equipment to regulate volume level and quality of sound during radio and television broadcasts. Operate radio transmitter to broadcast radio and television programs.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor strength, clarity, and reliability of incoming and outgoing signals, and adjust equipment as necessary to maintain quality broadcasts.

Observe monitors and converse with station personnel to determine audio and video levels and to ascertain that programs are airing.

Monitor and log transmitter readings.

Report equipment problems, ensure that repairs are made, and make emergency repairs to equipment when necessary and possible.

Play and record broadcast programs using automation systems.

Top Work Activities

Interacting with Computers

Getting Information

Updating and Using Relevant Knowledge

Top Skills

Critical Thinking

Active Listening

Monitoring

Top Knowledge

Computers and Electronics

Telecommunications

Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 164 | 151 | -7.93 | 0 | 50 | 50 | \$19,888 | \$35,765 | \$43,703 |

Photographers

27-4021 | Arts, AV Technology & Communications | Artistic | Avg to Above Avg Growth |

MEDIUM SKILL

Alternate Job Title(s): Camera Operator

Occupational Description

Photograph persons, subjects, merchandise, or other commercial products. May develop negatives and produce finished prints. Include scientific photographers, aerial photographers, and photojournalists.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Take pictures of individuals, families, and small groups, either in studio or on location.

Adjust apertures, shutter speeds, and camera focus based on a combination of factors such as lighting, field depth, subject motion, film type, and film speed.

Use traditional or digital cameras, along with a variety of equipment such as tripods, filters, and flash attachments.

Create artificial light, using flashes and reflectors.

Determine desired images and picture composition, selecting and adjusting subjects, equipment, and lighting to achieve desired effects.

Top Work Activities

Thinking Creatively

Identifying Objects, Actions, and Events

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Sales and Marketing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 346 | 379 | 9.54 | 33 | 69 | 102 | \$18,544 | \$29,324 | \$34,715 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Chiropractors

29-1011 | Healthcare & Human Services | Social | Very High Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): N/A

Occupational Description

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

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Diagnose health problems by reviewing patients' health and medical histories, questioning, observing and examining patients, and interpreting x-rays.

Maintain accurate case histories of patients.

Perform a series of manual adjustments to the spine, or other articulations of the body, to correct the musculoskeletal system.

Evaluate the functioning of the neuromusculoskeletal system and the spine using systems of chiropractic diagnosis.

Obtain and record patients' medical histories.

Top Work Activities

Assisting and Caring for Others

Getting Information

Performing for or Working Directly with the Public

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 160 | 183 | 14.38 | 23 | 28 | 51 | \$42,383 | \$81,702 | \$101,362 |

Dentists, General

29-1021 | Healthcare & Human Services | Investigative | Below Average Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): N/A

Occupational Description

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

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Administer anesthetics to limit the amount of pain experienced by patients during procedures.

Use masks, gloves and safety glasses to protect themselves and their patients from infectious diseases.

Examine teeth, gums, and related tissues, using dental instruments, x-rays, and other diagnostic equipment, to evaluate dental health, diagnose diseases or abnormalities, and plan appropriate treatments.

Formulate plan of treatment for patient's teeth and mouth tissue.

Use air turbine and hand instruments, dental appliances and surgical implements.

Top Work Activities

Making Decisions and Solving Problems

Updating and Using Relevant Knowledge

Documenting and Recording Information

Top Skills

Critical Thinking

Judgment and Decision Making

Active Listening

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-----------|----------------|-------------|
| 271 | 288 | 6.27 | 17 | 75 | 92 | \$111,783 | \$196,447 | \$238,779 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Dietitians and Nutritionists

29-1031 | Healthcare & Human Services | Investigative | Below Average Growth |

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Public Health Dietitian; Nutrition Director; Research Dietitian

Occupational Description

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.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Counsel individuals and groups on basic rules of good nutrition, healthy eating habits, and nutrition monitoring to improve their quality of life.

Assess nutritional needs, diet restrictions and current health plans to develop and implement dietary-care plans and provide nutritional counseling.

Advise patients and their families on nutritional principles, dietary plans and diet modifications, and food selection and preparation.

Consult with physicians and health care personnel to determine nutritional needs and diet restrictions of patient or client.

Monitor food service operations to ensure conformance to nutritional, safety, sanitation and quality standards.

Top Work Activities

Getting Information

Top Skills

Active Listening

Top Knowledge

Biology

Updating and Using Relevant Knowledge

Writing

English Language

Communicating with Supervisors, Peers, or Subordinates

Speaking

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 226 | 237 | 4.87 | 11 | 76 | 87 | \$36,066 | \$47,908 | \$53,830 |

Optometrists

29-1041 | Healthcare & Human Services | Investigative | Very High Growth |

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Doctor of Optometry

Occupational Description

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.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine eyes, using observation, instruments and pharmaceutical agents, to determine visual acuity and perception, focus and coordination and to diagnose diseases and other abnormalities such as glaucoma or color blindness.

Prescribe medications to treat eye diseases if state laws permit.

Analyze test results and develop a treatment plan.

Prescribe, supply, fit and adjust eyeglasses, contact lenses and other vision aids.

Educate and counsel patients on contact lens care, visual hygiene, lighting arrangements and safety factors.

Top Work Activities

Making Decisions and Solving Problems

Top Skills

Science

Top Knowledge

Medicine and Dentistry

Performing for or Working Directly with the Public

Active Listening

Customer and Personal Service

Documenting and Recording Information

Critical Thinking

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 119 | 140 | 17.65 | 21 | 40 | 61 | \$52,462 | \$112,615 | \$142,691 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Pharmacists

29-1051 | Healthcare & Human Services | Investigative | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): Apothecary; Druggist; Industrial Pharmacist

Occupational Description

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.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Review prescriptions to assure accuracy, to ascertain the needed ingredients, and to evaluate their suitability.

Provide information and advice regarding drug interactions, side effects, dosage and proper medication storage.

Assess the identity, strength and purity of medications.

Maintain records, such as pharmacy files, patient profiles, charge system files, inventories, control records for radioactive nuclei, and registries of poisons, narcotics, and controlled drugs.

Compound and dispense medications as prescribed by doctors and dentists, by calculating, weighing, measuring, and mixing ingredients, or oversee these activities.

Top Work Activities

Interacting with Computers

Updating and Using Relevant Knowledge

Processing Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Chemistry

Medicine and Dentistry

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 876 | 1,038 | 18.49 | 162 | 194 | 356 | \$64,909 | \$90,615 | \$103,468 |

Family and General Practitioners

29-1062 | Healthcare & Human Services | Investigative | Very High Growth | **HIGH WAGE** | **ADVANCED SKILL**

Alternate Job Title(s): N/A

Occupational Description

Diagnose, treat, and help prevent diseases and injuries that commonly occur in the general population.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prescribe or administer treatment, therapy, medication, vaccination, and other specialized medical care to treat or prevent illness, disease, or injury.

Order, perform, and interpret tests and analyze records, reports, and examination information to diagnose patients' condition.

Monitor patients' conditions and progress and reevaluate treatments as necessary.

Collect, record, and maintain patient information, such as medical history, reports, and examination results.

Explain procedures and discuss test results or prescribed treatments with patients.

Top Work Activities

Assisting and Caring for Others

Performing for or Working Directly with the Public

Making Decisions and Solving Problems

Top Skills

Active Listening

Critical Thinking

Speaking

Top Knowledge

Medicine and Dentistry

Psychology

Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-----------|----------------|-------------|
| 443 | 509 | 14.90 | 66 | 78 | 144 | \$118,208 | \$183,603 | \$216,300 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Internists, General

29-1063 | Healthcare & Human Services

Investigative | Very High Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): N/A

Occupational Description

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

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Treat internal disorders, such as hypertension, heart disease, diabetes, and problems of the lung, brain, kidney, and gastrointestinal tract.

Analyze records, reports, test results, or examination information to diagnose medical condition of patient.

Prescribe or administer medication, therapy, and other specialized medical care to treat or prevent illness, disease, or injury.

Provide and manage long-term, comprehensive medical care, including diagnosis and nonsurgical treatment of diseases, for adult patients in an office or hospital.

Manage and treat common health problems, such as infections, influenza and pneumonia, as well as serious, chronic, and complex illnesses, in adolescents, adults, and the elderly.

Top Work Activities

Making Decisions and Solving Problems

Assisting and Caring for Others

Getting Information

Top Skills

Speaking

Active Listening

Science

Top Knowledge

Medicine and Dentistry

English Language

Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 111 | 127 | 14.41 | 16 | 20 | 36 | N/A | \$200,718 | N/A |

Psychiatrists

29-1066 | Healthcare & Human Services

Investigative | Very High Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Psychoanalyst; Neuropsychiatrist

Occupational Description

Diagnose, treat, and help prevent disorders of the mind.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prescribe, direct, and administer psychotherapeutic treatments or medications to treat mental, emotional, or behavioral disorders.

Analyze and evaluate patient data and test findings to diagnose nature and extent of mental disorder.

Collaborate with physicians, psychologists, social workers, psychiatric nurses, or other professionals to discuss treatment plans and progress.

Gather and maintain patient information and records, including social and medical history obtained from patients, relatives, and other professionals.

Design individualized care plans, using a variety of treatments.

Top Work Activities

Assisting and Caring for Others

Getting Information

Making Decisions and Solving Problems

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Therapy and Counseling

Medicine and Dentistry

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 86 | 98 | 13.95 | 12 | 15 | 27 | \$77,096 | \$150,757 | \$187,587 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Registered Nurses

29-1111 | Healthcare & Human Services

Social

Exceptional Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Nursing Supervisor; Nurse Midwife; Nurse Practitioner

Occupational Description

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

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor, record and report symptoms and changes in patients' conditions.

Maintain accurate, detailed reports and records.

Record patients' medical information and vital signs.

Order, interpret, and evaluate diagnostic tests to identify and assess patient's condition.

Modify patient treatment plans as indicated by patients' responses and conditions.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Getting Information

Top Skills

Social Perceptiveness

Active Listening

Speaking

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 6,363 | 7,737 | 21.59 | 1,374 | 1,112 | 2,486 | \$42,003 | \$56,113 | \$63,168 |

Occupational Therapists

29-1122 | Healthcare & Human Services

Social

Very High Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan, organize, and conduct occupational therapy programs in hospital, institutional, or community settings to help rehabilitate those impaired because of illness, injury or psychological or developmental problems.

Test and evaluate patients' physical and mental abilities and analyze medical data to determine realistic rehabilitation goals for patients.

Select activities that will help individuals learn work and life-management skills within limits of their mental and physical capabilities.

Evaluate patients' progress and prepare reports that detail progress.

Complete and maintain necessary records.

Top Work Activities

Assisting and Caring for Others

Making Decisions and Solving Problems

Getting Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Therapy and Counseling

Psychology

Sociology and Anthropology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 230 | 268 | 16.52 | 38 | 42 | 80 | \$40,677 | \$55,325 | \$62,649 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Physical Therapists

29-1123 | Healthcare & Human Services

Social

Exceptional Growth

HIGH WAGE

ADVANCED SKILL

Alternate Job Title(s): Physiotherapist; Pulmonary Physical Therapist

Occupational Description

Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Perform and document an initial exam, evaluating data to identify problems and determine a diagnosis prior to intervention.

Plan, prepare and carry out individually designed programs of physical treatment to maintain, improve or restore physical functioning, alleviate pain and prevent physical dysfunction in patients.

Record prognosis, treatment, response, and progress in patient's chart or enter information into computer.

Identify and document goals, anticipated progress and plans for reevaluation.

Evaluate effects of treatment at various stages and adjust treatments to achieve maximum benefit.

Top Work Activities

Assisting and Caring for Others

Making Decisions and Solving Problems

Documenting and Recording Information

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Medicine and Dentistry

Therapy and Counseling

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 431 | 513 | 19.03 | 82 | 52 | 134 | \$51,097 | \$64,749 | \$71,575 |

Respiratory Therapists

29-1126 | Healthcare & Human Services

Social

Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Inhalation Therapist; Respiratory Care Practitioner; Oxygen Therapist

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Provide emergency care, including artificial respiration, external cardiac massage and assistance with cardiopulmonary resuscitation.

Monitor patient's physiological responses to therapy, such as vital signs, arterial blood gases, and blood chemistry changes, and consult with physician if adverse reactions occur.

Read prescription, measure arterial blood gases, and review patient information to assess patient condition.

Set up and operate devices such as mechanical ventilators, therapeutic gas administration apparatus, environmental control systems, and aerosol generators, following specified parameters of treatment.

Enforce safety rules and ensure careful adherence to physicians' orders.

Top Work Activities

Assisting and Caring for Others

Getting Information

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Customer and Personal Service

Medicine and Dentistry

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 206 | 258 | 25.24 | 52 | 38 | 90 | \$35,976 | \$43,801 | \$47,713 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Speech-Language Pathologists

29-1127 | Healthcare & Human Services | Social | Below Average Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Oral Therapist; Speech Clinician; Speech Therapist

Occupational Description

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.

Master's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor patients' progress and adjust treatments accordingly.

Evaluate hearing or speech and language test results, barium swallow results, and medical or background information to diagnose and plan treatment for speech, language, fluency, voice, and swallowing disorders.

Administer hearing or speech and language evaluations, tests, or examinations to patients to collect information on type and degree of impairments, using written and oral tests and special instruments.

Write reports and maintain proper documentation of information, such as client Medicaid and billing records and caseload activities, including the initial evaluation, treatment, progress, and discharge of clients.

Develop and implement treatment plans for problems such as stuttering, delayed language, swallowing disorders, and inappropriate pitch or harsh voice problems, based on own assessments and recommendations of physicians, psychologists, or social workers.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Making Decisions and Solving Problems

Updating and Using Relevant Knowledge

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

English Language

Therapy and Counseling

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 400 | 423 | 5.75 | 23 | 73 | 96 | \$39,295 | \$51,243 | \$57,217 |

Veterinarians

29-1131 | Healthcare & Human Services | Investigative | Exceptional Growth

HIGH WAGE **ADVANCED SKILL**

Alternate Job Title(s): Animal Pathologist; Animal Surgeon; Veterinary Bacteriologist

Occupational Description

Diagnose and treat diseases and dysfunctions of animals. May engage in a particular function, such as research and development, consultation, administration, technical writing, sale or production of commercial products, or rendering of technical services to commercial firms or other organizations. Include veterinarians who inspect livestock.

First professional degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Treat sick or injured animals by prescribing medication, setting bones, dressing wounds, or performing surgery.

Examine animals to detect and determine the nature of diseases or injuries.

Provide care to a wide range of animals or specialize in a particular species, such as horses or exotic birds.

Inoculate animals against various diseases such as rabies and distemper.

Advise animal owners regarding sanitary measures, feeding, general care, medical conditions, and treatment options.

Top Work Activities

Making Decisions and Solving Problems

Getting Information

Updating and Using Relevant Knowledge

Top Skills

Science

Active Listening

Speaking

Top Knowledge

Biology

Customer and Personal Service

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 163 | 204 | 25.15 | 41 | 29 | 70 | \$51,581 | \$69,090 | \$77,844 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Medical and Clinical Laboratory Technologists

29-2011 | Healthcare & Human Services | Investigative | High Growth | **HIGH DEMAND** | **HIGH WAGE** | **HIGH SKILL**

Alternate Job Title(s): Blood Bank Technologist; Cytotechnologist; Immunohematologist

Occupational Description

Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct chemical analysis of body fluids, including blood, urine, and spinal fluid, to determine presence of normal and abnormal components.

Analyze laboratory findings to check the accuracy of the results.

Enter data from analysis of medical tests and clinical results into computer for storage.

Operate, calibrate and maintain equipment used in quantitative and qualitative analysis, such as spectrophotometers, calorimeters, flame photometers, and computer-controlled analyzers.

Establish and monitor quality assurance programs and activities to ensure the accuracy of laboratory results.

Top Work Activities

Interacting with Computers

Documenting and Recording Information

Evaluating Information to Determine Compliance with Standards

Top Skills

Active Listening

Science

Reading Comprehension

Top Knowledge

Biology

Chemistry

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 539 | 601 | 11.50 | 62 | 102 | 164 | \$38,050 | \$48,685 | \$54,002 |

Medical and Clinical Laboratory Technicians

29-2012 | Healthcare & Human Services | Realistic | Avg to Above Avg Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Blood Bank Technician; Cytotechnician; Serology Technician

Occupational Description

Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct chemical analyses of body fluids, such as blood and urine, using microscope or automatic analyzer to detect abnormalities or diseases, and enter findings into computer.

Conduct blood tests for transfusion purposes and perform blood counts.

Examine cells stained with dye to locate abnormalities.

Set up, maintain, calibrate, clean, and test sterility of medical laboratory equipment.

Analyze the results of tests and experiments to ensure conformity to specifications, using special mechanical and electrical devices.

Top Work Activities

Updating and Using Relevant Knowledge

Interacting with Computers

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Reading Comprehension

Science

Top Knowledge

Chemistry

Biology

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 497 | 550 | 10.66 | 53 | 94 | 147 | \$23,993 | \$32,730 | \$37,098 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Dental Hygienists

29-2021 | Healthcare & Human Services | Social | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Oral Hygienist

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean calcareous deposits, accretions, and stains from teeth and beneath margins of gums, using dental instruments.

Record and review patient medical histories.

Examine gums, using probes, to locate periodontal recessed gums and signs of gum disease.

Provide clinical services and health education to improve and maintain the oral health of patients and the general public.

Feel and visually examine gums for sores and signs of disease.

Top Work Activities

Documenting and Recording Information

Performing for or Working Directly with the Public

Assisting and Caring for Others

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 553 | 678 | 22.60 | 125 | 113 | 238 | \$46,161 | \$58,374 | \$64,481 |

Cardiovascular Technologists and Technicians

29-2031 | Healthcare & Human Services | Realistic | Exceptional Growth | **MEDIUM SKILL**

Alternate Job Title(s): Cardiographer; Cardiopulmonary Technologist; E.K.G. Technician

Occupational Description

Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary-functions, lung capacity, and similar tests. Include vascular technologists.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor patients' blood pressure and heart rate using electrocardiogram (EKG) equipment during diagnostic and therapeutic procedures to notify the physician if something appears wrong.

Explain testing procedures to patient to obtain cooperation and reduce anxiety.

Observe gauges, recorder, and video screens of data analysis system during imaging of cardiovascular system.

Monitor patients' comfort and safety during tests, alerting physicians to abnormalities or changes in patient responses.

Obtain and record patient identification, medical history or test results.

Top Work Activities

Assisting and Caring for Others

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Monitoring

Reading Comprehension

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 75 | 93 | 24.00 | 18 | 11 | 29 | \$27,505 | \$39,953 | \$46,176 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Diagnostic Medical Sonographers

29-2032 | Healthcare & Human Services | Investigative | Very High Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): Ultrasonic Tester; Ultrasound Technologist

Occupational Description

Produce ultrasonic recordings of internal organs for use by physicians.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Provide sonogram and oral or written summary of technical findings to physician for use in medical diagnosis.

Decide which images to include, looking for differences between healthy and pathological areas.

Operate ultrasound equipment to produce and record images of the motion, shape and composition of blood, organs, tissues and bodily masses such as fluid accumulations.

Observe screen during scan to ensure that image produced is satisfactory for diagnostic purposes, making adjustments to equipment as required.

Select appropriate equipment settings and adjust patient positions to obtain the best sites and angles.

Top Work Activities

Updating and Using Relevant Knowledge

Assisting and Caring for Others

Getting Information

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Customer and Personal Service

Medicine and Dentistry

Physics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 62 | 72 | 16.13 | 10 | 9 | 19 | \$55,838 | \$65,003 | \$69,585 |

Radiologic Technologists and Technicians

29-2034 | Healthcare & Human Services | Realistic | Very High Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): CAT Scan Operator; Skiagrapher; X-Ray Technician

Occupational Description

Take X-rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Include technologists who specialize in other modalities, such as computed tomography and magnetic resonance. Include workers whose primary duties are to demonstrate portions of the human body on X-ray film or fluoroscopic screen.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Use beam-restrictive devices and patient-shielding techniques to minimize radiation exposure to patient and staff.

Position x-ray equipment and adjust controls to set exposure factors, such as time and distance.

Position patient on examining table and set up and adjust equipment to obtain optimum view of specific body area as requested by physician.

Explain procedures to patients to reduce anxieties and obtain cooperation.

Determine patients' x-ray needs by reading requests or instructions from physicians.

Top Work Activities

Assisting and Caring for Others

Performing for or Working Directly with the Public

Interacting with Computers

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Customer and Personal Service

Physics

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 487 | 558 | 14.58 | 71 | 70 | 141 | \$33,802 | \$45,058 | \$50,686 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Emergency Medical Technicians and Paramedics

29-2041 | Healthcare & Human Services

Social

Below Average Growth

HIGH DEMAND**MEDIUM SKILL**

Alternate Job Title(s): E.M.T.

Occupational Description

Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Administer first-aid treatment and life-support care to sick or injured persons in prehospital setting.

Perform emergency diagnostic and treatment procedures, such as stomach suction, airway management or heart monitoring, during ambulance ride.

Observe, record, and report to physician the patient's condition or injury, the treatment provided, and reactions to drugs and treatment.

Immobilize patient for placement on stretcher and ambulance transport, using backboard or other spinal immobilization device.

Maintain vehicles and medical and communication equipment, and replenish first-aid equipment and supplies.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Making Decisions and Solving Problems

Top Skills

Critical Thinking

Service Orientation

Active Listening

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 611 | 636 | 4.09 | 25 | 125 | 150 | \$17,128 | \$29,069 | \$35,039 |

Dietetic Technicians

29-2051 | Healthcare & Human Services

Social

High Growth

MEDIUM SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe patient food intake and report progress and dietary problems to dietician.

Prepare a major meal, following recipes and determining group food quantities.

Obtain and evaluate dietary histories of individuals to plan nutritional programs.

Analyze menus and recipes, standardize recipes and test new products.

Plan menus and diets or guide individuals and families in food selection, preparation, and menu planning, based upon nutritional needs and established guidelines.

Top Work Activities

Getting Information

Monitor Processes, Materials, or Surroundings

Identifying Objects, Actions, and Events

Top Skills

Speaking

Reading Comprehension

Active Listening

Top Knowledge

Food Production

English Language

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 102 | 116 | 13.73 | 14 | 26 | 40 | \$18,207 | \$23,555 | \$26,230 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Pharmacy Technicians

29-2052 | Healthcare & Human Services

Conventional | Exceptional Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Receive written prescription or refill requests and verify that information is complete and accurate.

Establish and maintain patient profiles, including lists of medications taken by individual patients.

Maintain proper storage and security conditions for drugs.

Answer telephones, responding to questions or requests.

Prepack bulk medicines, fill bottles with prescribed medications, and type and affix labels.

Top Work Activities

Processing Information

Getting Information

Interacting with Computers

Top Skills

Active Listening

Reading Comprehension

Speaking

Top Knowledge

Customer and Personal Service

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 506 | 655 | 29.45 | 149 | 277 | \$23,247 | \$30,414 | \$33,998 |

Surgical Technologists

29-2055 | Healthcare & Human Services

Realistic | Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Operating Room Technician; Scrub Technician; Surgical Orderly

Occupational Description

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.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Count sponges, needles, and instruments before and after operation.

Maintain a proper sterile field during surgical procedures.

Hand instruments and supplies to surgeons and surgeons' assistants, hold retractors and cut sutures, and perform other tasks as directed by surgeon during operation.

Prepare patients for surgery, including positioning patients on the operating table and covering them with sterile surgical drapes to prevent exposure.

Scrub arms and hands and assist the surgical team to scrub and put on gloves, masks, and surgical clothing.

Top Work Activities

Assisting and Caring for Others

Getting Information

Monitor Processes, Materials, or Surroundings

Top Skills

Monitoring

Coordination

Operation Monitoring

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 177 | 224 | 26.55 | 47 | 92 | \$28,003 | \$34,718 | \$38,076 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Veterinary Technologists and Technicians

29-2056 | Healthcare & Human Services | Realistic | Exceptional Growth | **MEDIUM SKILL**

Alternate Job Title(s): Animal Technician; Veterinary X-Ray Operator

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe the behavior and condition of animals, and monitor their clinical symptoms.

Maintain controlled drug inventory and related log books.

Administer anesthesia to animals, under the direction of a veterinarian, and monitor animals' responses to anesthetics so that dosages can be adjusted.

Care for and monitor the condition of animals recovering from surgery.

Perform laboratory tests on blood, urine, and feces, such as urinalyses and blood counts, to assist in the diagnosis and treatment of animal health problems.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Getting Information

Top Skills

Critical Thinking

Monitoring

Active Listening

Top Knowledge

Biology

Customer and Personal Service

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 167 | 215 | 28.74 | 48 | 42 | 90 | \$22,603 | \$27,831 | \$30,445 |

Licensed Practical and Licensed Vocational Nurses

29-2061 | Healthcare & Human Services | Social | Very High Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Licensed Attendant

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Administer prescribed medications or start intravenous fluids, and note times and amounts on patients' charts.

Observe patients, charting and reporting changes in patients' conditions, such as adverse reactions to medication or treatment, and taking any necessary action.

Provide basic patient care and treatments, such as taking temperatures or blood pressures, dressing wounds, treating bedsores, giving enemas or douches, rubbing with alcohol, massaging, or performing catheterizations.

Sterilize equipment and supplies, using germicides, sterilizer, or autoclave.

Answer patients' calls and determine how to assist them.

Top Work Activities

Assisting and Caring for Others

Getting Information

Documenting and Recording Information

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Medicine and Dentistry

Customer and Personal Service

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 3,268 | 3,765 | 15.21 | 497 | 1,022 | 1,519 | \$29,103 | \$34,813 | \$37,668 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Medical Records and Health Information Technicians

29-2071 | Healthcare & Human Services

Conventional | Very High Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Disability Rater; Medical Records Specialist; Medical Library Historian

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Protect the security of medical records to ensure that confidentiality is maintained.

Review records for completeness, accuracy and compliance with regulations.

Retrieve patient medical records for physicians, technicians, or other medical personnel.

Release information to persons and agencies according to regulations.

Plan, develop, maintain and operate a variety of health record indexes and storage and retrieval systems to collect, classify, store and analyze information.

Top Work Activities

Getting Information

Interacting with Computers

Organizing, Planning, and Prioritizing Work

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 515 | 593 | 15.15 | 78 | 105 | 183 | \$22,170 | \$30,384 | \$34,490 |

Opticians, Dispensing

29-2081 | Healthcare & Human Services

Enterprising | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Contact Lens Fitter; Eyeglass Fitter

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Verify that finished lenses are ground to specifications.

Prepare work orders and instructions for grinding lenses and fabricating eyeglasses.

Measure clients' bridge and eye size, temple length, vertex distance, pupillary distance, and optical centers of eyes, using measuring devices.

Heat, shape, or bend plastic or metal frames to adjust eyeglasses to fit clients, using pliers and hands.

Assist clients in selecting frames according to style and color, and ensure that frames are coordinated with facial and eye measurements and optical prescriptions.

Top Work Activities

Performing for or Working Directly with the Public

Getting Information

Updating and Using Relevant Knowledge

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Customer and Personal Service

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 414 | 434 | 4.83 | 20 | 84 | 104 | \$21,449 | \$28,074 | \$31,387 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Occupational Health and Safety Specialists

29-9011 | Healthcare & Human Services | Investigative | Below Average Growth

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Health Sanitarian; Industrial Hygienist; Health Inspector

Occupational Description

Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals. May be employed in the public or private sector. Include environmental protection officers.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Order suspension of activities that pose threats to workers' health and safety.

Recommend measures to help protect workers from potentially hazardous work methods, processes, or materials.

Investigate accidents to identify causes and to determine how such accidents might be prevented in the future.

Investigate the adequacy of ventilation, exhaust equipment, lighting, and other conditions that could affect employee health, comfort, or performance.

Develop and maintain hygiene programs such as noise surveys, continuous atmosphere monitoring, ventilation surveys, and asbestos management plans.

Top Work Activities

Evaluating Information to Determine Compliance with Standards

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

English Language

Public Safety and Security

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 112 | 120 | 7.14 | 8 | 37 | 45 | \$41,648 | \$62,112 | \$72,344 |

Occupational Health and Safety Technicians

29-9012 | Healthcare & Human Services | Conventional | Very High Growth

MEDIUM SKILL

Alternate Job Title(s): Mine Examiner

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain all required records and documentation.

Supply, operate, and maintain personal protective equipment.

Verify that safety equipment such as hearing protection and respirators is available to employees, and monitor their use of such equipment to ensure proper fit and use.

Prepare and calibrate equipment used to collect and analyze samples.

Evaluate situations where a worker has refused to work on the grounds that danger or potential harm exists, and determine how such situations should be handled.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Evaluating Information to Determine Compliance with Standards

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Public Safety and Security

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 68 | 78 | 14.71 | 10 | 23 | 33 | \$27,848 | \$43,668 | \$51,577 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Home Health Aides

31-1011 | Healthcare & Human Services | Social | Exceptional Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Home Attendant

Occupational Description

Provide routine, personal healthcare, such as bathing, dressing, or grooming, to elderly, convalescent, or disabled persons in the home of patients or in a residential care facility.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain records of patient care, condition, progress, or problems to report and discuss observations with supervisor or case manager.

Check patients' pulse, temperature and respiration.

Provide patients with help moving in and out of beds, baths, wheelchairs or automobiles, and with dressing and grooming.

Care for patients by changing bed linens, washing and ironing laundry, cleaning, or assisting with their personal care.

Entertain, converse with, or read aloud to patients to keep them mentally healthy and alert.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Service Orientation

Critical Thinking

Top Knowledge

Psychology

Public Safety and Security

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 2,077 | 2,748 | 32.31 | 671 | | 207 | \$17,911 | \$21,541 | \$23,356 |

Nursing Aides, Orderlies, and Attendants

31-1012 | Healthcare & Human Services | Social | Very High Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Certified Nursing Assistant; Hospital Aide; Infirmary Attendant

Occupational Description

Provide basic patient care under direction of nursing staff. Perform duties, such as feed, bathe, dress, groom, or move patients, or change linens. Exclude "Home Health Aides" (31-1011) and "Psychiatric Aides" (31-1013).

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Answer patients' call signals.

Turn and reposition bedridden patients, alone or with assistance, to prevent bedsores.

Observe patients' conditions, measuring and recording food and liquid intake and output and vital signs, and report changes to professional staff.

Feed patients who are unable to feed themselves.

Provide patients with help walking, exercising, and moving in and out of bed.

Top Work Activities

Assisting and Caring for Others

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Social Perceptiveness

Service Orientation

Active Listening

Top Knowledge

Customer and Personal Service

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 6,719 | 7,705 | 14.67 | 986 | | 669 | \$20,166 | \$23,786 | \$25,596 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Psychiatric Aides

31-1013 | Healthcare & Human Services | Social | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Charge Attendant; Psychiatric Orderly

Occupational Description

Assist mentally impaired or emotionally disturbed patients, working under direction of nursing and medical staff.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Complete physical checks and monitor patients to detect unusual or harmful behavior, and report observations to professional staff.

Record and maintain patient information such as vital signs, eating habits, behavior, progress notes, and treatment and discharge plans.

Maintain patients' restrictions to assigned areas.

Work as part of a team that may include psychiatrists, psychologists, psychiatric nurses and social workers.

Provide patients with assistance in bathing, dressing, and grooming, demonstrating these skills as necessary.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Resolving Conflicts and Negotiating with Others

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Psychology

Therapy and Counseling

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 469 | 485 | 3.41 | 16 | 47 | 63 | \$19,297 | \$25,291 | \$28,288 |

Occupational Therapist Assistants

31-2011 | Healthcare & Human Services | Social | Exceptional Growth |

MEDIUM SKILL

Alternate Job Title(s): Occupational Therapy Technician

Occupational Description

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.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Select therapy activities to fit patients' needs and capabilities.

Observe and record patients' progress, attitudes, and behavior, and maintain this information in client records.

Communicate and collaborate with other health care professionals involved with the care of a patient.

Maintain and promote a positive attitude toward clients and their treatment programs.

Monitor patients' performance in therapy activities, providing encouragement.

Top Work Activities

Assisting and Caring for Others

Documenting and Recording Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Active Listening

Writing

Top Knowledge

Psychology

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 62 | 74 | 19.35 | 12 | 9 | 21 | \$31,034 | \$40,416 | \$45,108 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Physical Therapist Aides

31-2022 | Healthcare & Human Services | Social | Very High Growth

SOME SKILL

Alternate Job Title(s): Physiotherapy Aide

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean and organize work area and disinfect equipment after treatment.

Administer active and passive manual therapeutic exercises, therapeutic massage, and heat, light, sound, water, or electrical modality treatments, such as ultrasound.

Instruct, motivate, safeguard and assist patients practicing exercises and functional activities, under direction of medical staff.

Record treatment given and equipment used.

Confer with physical therapy staff or others to discuss and evaluate patient information for planning, modifying, and coordinating treatment.

Top Work Activities

Assisting and Caring for Others

Performing General Physical Activities

Getting Information

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Customer and Personal Service

English Language

Therapy and Counseling

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 126 | 148 | 17.46 | 22 | 18 | 40 | \$20,097 | \$24,674 | \$26,962 |

Massage Therapists

31-9011 | Healthcare & Human Services | Social | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Masseuse; Masseur; Rubber

Occupational Description

Massage customers for hygienic or remedial purposes.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with clients about their medical histories and problems with stress or pain to determine how massage will be most helpful.

Apply finger and hand pressure to specific points of the body.

Massage and knead muscles and soft tissues of the body to provide treatment for medical conditions, injuries, or wellness maintenance.

Maintain treatment records.

Provide clients with guidance and information about techniques for postural improvement and stretching, strengthening, relaxation, and rehabilitative exercises.

Top Work Activities

Performing for or Working Directly with the Public

Assisting and Caring for Others

Performing General Physical Activities

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Therapy and Counseling

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 270 | 292 | 8.15 | 22 | 36 | 58 | \$16,906 | \$24,663 | \$28,541 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Dental Assistants

| | | | | | | | | |
|---|-----------------------------|-----------------------|--------------------|-------------------------------|---------------------|----------|----------------|-------------|
| 31-9091 | Healthcare & Human Services | Conventional | Exceptional Growth | HIGH DEMAND | MEDIUM SKILL | | | |
| Alternate Job Title(s): N/A | | | | | | | | |
| Occupational Description | | | | | | | | |
| Assist dentist, set up patient and equipment, and keep records. | | | | | | | | |
| Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation. | | | | | | | | |
| Top Core Tasks | | | | | | | | |
| Prepare patient, sterilize and disinfect instruments, set up instrument trays, prepare materials, and assist dentist during dental procedures. | | | | | | | | |
| Expose dental diagnostic x-rays. | | | | | | | | |
| Record treatment information in patient records. | | | | | | | | |
| Provide postoperative instructions prescribed by dentist. | | | | | | | | |
| Assist dentist in management of medical and dental emergencies. | | | | | | | | |
| Top Work Activities | | Top Skills | | Top Knowledge | | | | |
| Assisting and Caring for Others | | Speaking | | Medicine and Dentistry | | | | |
| Performing for or Working Directly with the Public | | Reading Comprehension | | Customer and Personal Service | | | | |
| Communicating with Supervisors, Peers, or Subordinates | | Active Listening | | English Language | | | | |
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
| 595 | 728 | 22.35 | 133 | 112 | 245 | \$26,700 | \$32,669 | \$35,654 |

Medical Assistants

| | | | | | | | | |
|---|-----------------------------|-----------------------|--------------------|-------------------------------|---------------------|----------|----------------|-------------|
| 31-9092 | Healthcare & Human Services | Social | Exceptional Growth | HIGH DEMAND | MEDIUM SKILL | | | |
| Alternate Job Title(s): Morgue Attendant; Ophthalmic Aide; Physicians Aide | | | | | | | | |
| Occupational Description | | | | | | | | |
| Perform administrative and certain clinical duties under the direction of physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician. Exclude "Physician Assistants" (29-1071). | | | | | | | | |
| Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation. | | | | | | | | |
| Top Core Tasks | | | | | | | | |
| Record patients' medical history, vital statistics and information such as test results in medical records. | | | | | | | | |
| Interview patients to obtain medical information and measure their vital signs, weight, and height. | | | | | | | | |
| Prepare treatment rooms for patient examinations, keeping the rooms neat and clean. | | | | | | | | |
| Authorize drug refills and provide prescription information to pharmacies. | | | | | | | | |
| Clean and sterilize instruments and dispose of contaminated supplies. | | | | | | | | |
| Top Work Activities | | Top Skills | | Top Knowledge | | | | |
| Documenting and Recording Information | | Active Listening | | English Language | | | | |
| Assisting and Caring for Others | | Speaking | | Medicine and Dentistry | | | | |
| Getting Information | | Social Perceptiveness | | Customer and Personal Service | | | | |
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
| 583 | 719 | 23.33 | 136 | 65 | 201 | \$21,365 | \$26,582 | \$29,190 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Medical Equipment Preparers

31-9093 | Healthcare & Human Services | Realistic | High Growth

SOME SKILL

Alternate Job Title(s): Bandage Maker; Hot Packer; Sterilizer

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Clean instruments to prepare them for sterilization.
- Operate and maintain steam autoclaves, keeping records of loads completed, items in loads, and maintenance procedures performed.
- Organize and assemble routine and specialty surgical instrument trays and other sterilized supplies, filling special requests as needed.
- Examine equipment to detect leaks, worn or loose parts, or other indications of disrepair.
- Record sterilizer test results.

Top Work Activities

- Inspecting Equipment, Structures, or Material
- Updating and Using Relevant Knowledge
- Monitor Processes, Materials, or Surroundings

Top Skills

- Critical Thinking
- Active Listening
- Quality Control Analysis

Top Knowledge

- Customer and Personal Service
- English Language
- Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 51 | 58 | 13.73 | 7 | 6 | 13 | \$23,768 | \$29,080 | \$31,735 |

Medical Transcriptionists

31-9094 | Healthcare & Human Services | Conventional | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Medical Stenographer

Occupational Description

Use transcribing machines with headset and foot pedal to listen to recordings by physicians and other healthcare professionals dictating a variety of medical reports, such as emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcribe dictated reports and translate medical jargon and abbreviations into their expanded forms. Edit as necessary and return reports in either printed or electronic form to the dictator for review and signature, or correction.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Transcribe dictation for a variety of medical reports, such as patient histories, physical examinations, emergency room visits, operations, chart reviews, consultation, or discharge summaries.
- Review and edit transcribed reports or dictated material for spelling, grammar, clarity, consistency, and proper medical terminology.
- Distinguish between homonyms and recognize inconsistencies and mistakes in medical terms, referring to dictionaries, drug references, and other sources on anatomy, physiology, and medicine.
- Return dictated reports in printed or electronic form for physician's review, signature, and corrections and for inclusion in patients' medical records.
- Translate medical jargon and abbreviations into their expanded forms to ensure the accuracy of patient and health care facility records.

Top Work Activities

- Documenting and Recording Information
- Interacting with Computers
- Updating and Using Relevant Knowledge

Top Skills

- Active Listening
- Reading Comprehension
- Writing

Top Knowledge

- English Language
- Clerical
- Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 752 | 800 | 6.38 | 48 | 84 | 132 | \$21,965 | \$27,694 | \$30,559 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Correctional Officers

33-1011 | Law, Public Safety, Corrections & Security | Enterprising | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): Prison Guard Supervisor; Prison Warden

Occupational Description

Supervise and coordinate activities of correctional officers and jailers.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Take, receive, or check periodic inmate counts.

Maintain order, discipline, and security within assigned areas in accordance with relevant rules, regulations, policies, and laws.

Respond to emergencies, such as escapes.

Maintain knowledge of, comply with, and enforce all institutional policies, rules, procedures, and regulations.

Supervise and direct the work of correctional officers to ensure the safe custody, discipline, and welfare of inmates.

Top Work Activities

Resolving Conflicts and Negotiating with Others

Documenting and Recording Information

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Coordination

Top Knowledge

Public Safety and Security

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 118 | 128 | 8.47 | 10 | 43 | 53 | \$32,830 | \$43,413 | \$48,704 |

First-Line Supervisors/Managers of Police and Detectives

33-1012 | Law, Public Safety, Corrections & Security | Enterprising | Below Average Growth |

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Chief of Police; Precinct Captain

Occupational Description

Supervise and coordinate activities of members of police force.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Supervise and coordinate the investigation of criminal cases, offering guidance and expertise to investigators, and ensuring that procedures are conducted in accordance with laws and regulations.

Maintain logs, prepare reports, and direct the preparation, handling, and maintenance of departmental records.

Explain police operations to subordinates to assist them in performing their job duties.

Cooperate with court personnel and officials from other law enforcement agencies and testify in court as necessary.

Review contents of written orders to ensure adherence to legal requirements.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Law and Government

Public Safety and Security

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 193 | 205 | 6.22 | 12 | 85 | 97 | \$47,980 | \$66,638 | \$75,967 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Fire Fighters

33-2011 | Law, Public Safety, Corrections & Security

Realistic

Very High Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Explosive Ordnance Disposal Technician; Fireboat Operator; Smoke Jumper

Occupational Description

Control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster management.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Rescue victims from burning buildings and accident sites.
- Search burning buildings to locate fire victims.
- Administer first aid and cardiopulmonary resuscitation to injured persons.
- Dress with equipment such as fire resistant clothing and breathing apparatus.
- Drive and operate fire fighting vehicles and equipment.

Top Work Activities

- Assisting and Caring for Others
- Operating Vehicles, Mechanized Devices, or Equipment
- Inspecting Equipment, Structures, or Material

Top Skills

- Active Listening
- Critical Thinking
- Coordination

Top Knowledge

- Public Safety and Security
- Customer and Personal Service
- Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 500 | 590 | 18.00 | 90 | 154 | 244 | \$31,133 | \$43,129 | \$49,127 |

Bailiffs

33-3011 | Law, Public Safety, Corrections & Security

Realistic

Below Average Growth

SOME SKILL

Alternate Job Title(s): Court Officer; Sergeant at Arms

Occupational Description

Maintain order in courts of law.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Collect and retain unauthorized firearms from persons entering courtroom.
- Maintain order in courtroom during trial and guard jury from outside contact.
- Guard lodging of sequestered jury.
- Provide jury escort to restaurant and other areas outside of courtroom to prevent jury contact with public.
- Enforce courtroom rules of behavior and warn persons not to smoke or disturb court procedure.

Top Work Activities

- Identifying Objects, Actions, and Events
- Monitor Processes, Materials, or Surroundings
- Performing for or Working Directly with the Public

Top Skills

- Speaking
- Social Perceptiveness
- Monitoring

Top Knowledge

- Public Safety and Security
- Law and Government
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 171 | 181 | 5.85 | 10 | 38 | 48 | \$16,258 | \$16,900 | \$17,221 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Correctional Officers and Jailers

33-3012 | Law, Public Safety, Corrections & Security

Realistic

Below Average Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Convict Guard; Custodial Officer; Prison Guard

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Conduct head counts to ensure that each prisoner is present.

Monitor conduct of prisoners in housing unit, or during work or recreational activities, according to established policies, regulations, and procedures, to prevent escape or violence.

Inspect conditions of locks, window bars, grills, doors, and gates at correctional facilities to ensure security and help prevent escapes.

Record information, such as prisoner identification, charges, and incidences of inmate disturbance, and keep daily logs of prisoner activities.

Search prisoners and vehicles and conduct shakedowns of cells for valuables and contraband, such as weapons or drugs.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Public Safety and Security

Law and Government

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 623 | 676 | 8.51 | 53 | 138 | 191 | \$24,656 | \$32,310 | \$36,137 |

Detectives and Criminal Investigators

33-3021 | Law, Public Safety, Corrections & Security

Investigative

High Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Police Inspector; Deputy United States Marshal; Narcotics Agent

Occupational Description

Conduct investigations related to suspected violations of Federal, State, or local laws to prevent or solve crimes. Exclude "Private Detectives and Investigators" (33-9021).

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Provide testimony as a witness in court.

Secure deceased body and obtain evidence from it, preventing bystanders from tampering with it prior to medical examiner's arrival.

Examine crime scenes to obtain clues and evidence, such as loose hairs, fibers, clothing, or weapons.

Obtain evidence from suspects.

Record progress of investigation, maintain informational files on suspects, and submit reports to commanding officer or magistrate to authorize warrants.

Top Work Activities

Documenting and Recording Information

Getting Information

Making Decisions and Solving Problems

Top Skills

Speaking

Active Listening

Critical Thinking

Top Knowledge

Law and Government

Public Safety and Security

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 252 | 285 | 13.10 | 33 | 52 | 85 | \$39,121 | \$59,162 | \$69,182 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Fish and Game Wardens

33-3031 | Law, Public Safety, Corrections & Security | Realistic | Below Average Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): State Game Protector; Wildlife Control Agent; Wildlife Officer

Occupational Description

Patrol assigned area to prevent fish and game law violations. Investigate reports of damage to crops or property by wildlife. Compile biological data. Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Patrol assigned areas by car, boat, airplane, horse, or on foot to enforce game, fish, or boating laws or to manage wildlife programs, lakes, or land.
- Investigate hunting accidents and reports of fish and game law violations, and issue warnings or citations and file reports as necessary.
- Serve warrants, make arrests, and compile and present evidence for court actions.
- Protect and preserve native wildlife, plants, or ecosystems.
- Promote or provide hunter or trapper safety training.

Top Work Activities

- Operating Vehicles, Mechanized Devices, or Equipment
- Performing for or Working Directly with the Public
- Communicating with Persons Outside Organization

Top Skills

- Active Listening
- Speaking
- Critical Thinking

Top Knowledge

- Law and Government
- Public Safety and Security
- Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 56 | 59 | 5.36 | 3 | 13 | 16 | \$32,058 | \$46,175 | \$53,234 |

Police and Sheriff's Patrol Officers

33-3051 | Law, Public Safety, Corrections & Security | Realistic | Avg to Above Avg Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Border Guard; Campus Police; City Constable

Occupational Description

Maintain order, enforce laws and ordinances, and protect life and property in an assigned patrol district. Perform combination of following duties: patrol a specific area on foot or in a vehicle; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Provide for public safety by maintaining order, responding to emergencies, protecting people and property, enforcing motor vehicle and criminal laws, and promoting good community relations.
- Record facts to prepare reports that document incidents and activities.
- Monitor, note, report, and investigate suspicious persons and situations, safety hazards, and unusual or illegal activity in patrol area.
- Identify, pursue, and arrest suspects and perpetrators of criminal acts.
- Patrol specific area on foot, horseback, or motorized conveyance, responding promptly to calls for assistance.

Top Work Activities

- Getting Information
- Operating Vehicles, Mechanized Devices, or Equipment
- Identifying Objects, Actions, and Events

Top Skills

- Active Listening
- Critical Thinking
- Monitoring

Top Knowledge

- Public Safety and Security
- Law and Government
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 1,053 | 1,153 | 9.50 | 100 | 272 | 372 | \$31,181 | \$42,654 | \$48,391 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Security Guards

33-9032 | Law, Public Safety, Corrections & Security | Realistic | Below Average Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Bodyguard; Bouncer; Watchguard

Occupational Description

Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor and authorize entrance and departure of employees, visitors, and other persons to guard against theft and maintain security of premises.

Write reports of daily activities and irregularities such as equipment or property damage, theft, presence of unauthorized persons, or unusual occurrences.

Call police or fire departments in cases of emergency, such as fire or presence of unauthorized persons.

Answer alarms and investigate disturbances.

Circulate among visitors, patrons, or employees to preserve order and protect property.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Monitor Processes, Materials, or Surroundings

Getting Information

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Public Safety and Security

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,383 | 1,503 | 8.68 | 120 | 284 | 404 | \$17,520 | \$25,341 | \$29,252 |

Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers

33-9092 | Law, Public Safety, Corrections & Security | Realistic | Below Average Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): N/A

Occupational Description

Monitor recreational areas, such as pools, beaches, or ski slopes to provide assistance and protection to participants.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Rescue distressed persons, using rescue techniques and equipment.

Contact emergency medical personnel in case of serious injury.

Patrol or monitor recreational areas such as trails, slopes, and swimming areas, on foot, in vehicles, or from towers.

Examine injured persons and administer first aid or cardiopulmonary resuscitation, if necessary, using training and medical supplies and equipment.

Instruct participants in skiing, swimming, or other recreational activities and provide safety precaution information.

Top Work Activities

Making Decisions and Solving Problems

Identifying Objects, Actions, and Events

Monitor Processes, Materials, or Surroundings

Top Skills

Judgment and Decision Making

Speaking

Critical Thinking

Top Knowledge

Public Safety and Security

Customer and Personal Service

Medicine and Dentistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 331 | 361 | 9.06 | 30 | 224 | 254 | \$15,390 | \$17,473 | \$18,514 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Chefs and Head Cooks

35-1011 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Executive Chef; Pastry Chef; Sous Chef

Occupational Description

Direct the preparation, seasoning, and cooking of salads, soups, fish, meats, vegetables, desserts, or other foods. May plan and price menu items, order supplies, and keep records and accounts. May participate in cooking.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Check the quality of raw and cooked food products to ensure that standards are met.
- Monitor sanitation practices to ensure that employees follow standards and regulations.
- Check the quantity and quality of received products.
- Order or requisition food and other supplies needed to ensure efficient operation.
- Supervise and coordinate activities of cooks and workers engaged in food preparation.

Top Work Activities

- Thinking Creatively
- Making Decisions and Solving Problems
- Coordinating the Work and Activities of Others

Top Skills

- Monitoring
- Critical Thinking
- Time Management

Top Knowledge

- Production and Processing
- Administration and Management
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 250 | 257 | 2.80 | 7 | 24 | 31 | \$22,097 | \$31,172 | \$35,709 |

First-Line Supervisors/Managers of Food Preparation and Serving Workers

35-1012 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Cafeteria Manager; Caterer; Bar Manager

Occupational Description

Supervise workers engaged in preparing and serving food.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Train workers in food preparation, and in service, sanitation, and safety procedures.
- Compile and balance cash receipts at the end of the day or shift.
- Perform various financial activities such as cash handling, deposit preparation, and payroll.
- Supervise and participate in kitchen and dining area cleaning activities.
- Estimate ingredients and supplies required to prepare a recipe.

Top Work Activities

- Getting Information
- Judging the Qualities of Things, Services, or People
- Guiding, Directing, and Motivating Subordinates

Top Skills

- Speaking
- Active Listening
- Coordination

Top Knowledge

- Administration and Management
- Customer and Personal Service
- Food Production

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,446 | 2,679 | 9.53 | 233 | 233 | 466 | \$20,620 | \$28,500 | \$32,440 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cooks, Fast Food

35-2011 | Marketing, Sales, Service & Tourism

Realistic

High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Fry Cook; Pizza Maker

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain sanitation, health, and safety standards in work areas.

Clean food preparation areas, cooking surfaces, and utensils.

Operate large-volume cooking equipment such as grills, deep-fat fryers, or griddles.

Verify that prepared food meets requirements for quality and quantity.

Take food and drink orders and receive payment from customers.

Top Work Activities

Getting Information

Judging the Qualities of Things, Services, or People

Monitor Processes, Materials, or Surroundings

Top Skills

Active Listening

Speaking

Coordination

Top Knowledge

Customer and Personal Service

Food Production

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | Replacement Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|----------------------|----------------|----------|----------------|-------------|
| 1,032 | 1,162 | 12.60 | 130 | 264 | 394 | \$15,636 | \$18,592 | \$20,069 |

Cooks, Institution and Cafeteria

35-2012 | Marketing, Sales, Service & Tourism

Realistic

Avg to Above Avg Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Camp Cook; Mess Cook; Galley Cook

Occupational Description

Prepare and cook large quantities of food for institutions, such as schools, hospitals, or cafeterias.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean and inspect galley equipment, kitchen appliances, and work areas to ensure cleanliness and functional operation.

Apportion and serve food to facility residents, employees, or patrons.

Cook foodstuffs according to menus, special dietary or nutritional restrictions, or numbers of portions to be served.

Clean, cut, and cook meat, fish, or poultry.

Monitor use of government food commodities to ensure that proper procedures are followed.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Evaluating Information to Determine Compliance with Standards

Top Skills

Time Management

Active Listening

Reading Comprehension

Top Knowledge

Food Production

Mathematics

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | Replacement Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|----------------------|----------------|----------|----------------|-------------|
| 1,266 | 1,409 | 11.30 | 143 | 324 | 467 | \$17,797 | \$22,530 | \$24,897 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cooks, Restaurant

35-2014 | Marketing, Sales, Service & Tourism

Realistic

High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Broiler Cook; Specialty Foreign Food Cook; Garde-manger

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect and clean food preparation areas, such as equipment and work surfaces, or serving areas to ensure safe and sanitary food-handling practices.

Ensure food is stored and cooked at correct temperature by regulating temperature of ovens, broilers, grills, and roasters.

Ensure freshness of food and ingredients by checking for quality, keeping track of old and new items, and rotating stock.

Turn or stir foods to ensure even cooking.

Season and cook food according to recipes or personal judgment and experience.

Top Work Activities

Identifying Objects, Actions, and Events

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Monitoring

Coordination

Active Listening

Top Knowledge

Food Production

Production and Processing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 2,782 | 3,146 | 13.08 | 364 | 712 | 1,076 | \$16,114 | \$19,752 | \$21,571 |

Cooks, Short Order

35-2015 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Barbecue Cook; Griddle Cook

Occupational Description

Prepare and cook to order a variety of foods that require only a short preparation time. May take orders from customers and serve patrons at counters or tables. Exclude "Fast Food Cooks" (35-2011).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Grill, cook, and fry foods such as french fries, eggs, and pancakes.

Clean food preparation equipment, work areas, and counters or tables.

Take orders from customers and cook foods requiring short preparation times, according to customer requirements.

Grill and garnish hamburgers or other meats such as steaks and chops.

Restock kitchen supplies, rotate food, and stamp the time and date on food in coolers.

Top Work Activities

Getting Information

Resolving Conflicts and Negotiating with Others

Judging the Qualities of Things, Services, or People

Top Skills

Active Listening

Coordination

Service Orientation

Top Knowledge

Customer and Personal Service

Production and Processing

Food Production

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 706 | 739 | 4.67 | 33 | 181 | 214 | \$16,832 | \$19,829 | \$21,328 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Food Preparation Workers

35-2021 | Marketing, Sales, Service & Tourism | Realistic | Below Average Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Coffee Maker; Kitchen Helper; Sandwich Maker

Occupational Description

Perform a variety of food preparation duties other than cooking, such as preparing cold foods and shellfish, slicing meat, and brewing coffee or tea.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean and sanitize work areas, equipment, utensils, dishes, or silverware.

Store food in designated containers and storage areas to prevent spoilage.

Prepare a variety of foods, such as meats, vegetables, desserts, according to customers' orders or supervisors' instructions, following approved procedures.

Take and record temperature of food and food storage areas such as refrigerators and freezers.

Wash, peel, and cut various foods, such as fruits and vegetables, to prepare for cooking or serving.

Top Work Activities

Performing General Physical Activities

Establishing and Maintaining Interpersonal Relationships

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Monitoring

Speaking

Top Knowledge

Food Production

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 2,199 | 2,265 | 3.00 | 66 | 787 | 853 | \$16,028 | \$20,208 | \$22,298 |

Bartenders

35-3011 | Marketing, Sales, Service & Tourism | Enterprising | High Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Barkeeper; Taproom Attendant

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect money for drinks served.

Check identification of customers to verify age requirements for purchase of alcohol.

Clean glasses, utensils, and bar equipment.

Balance cash receipts.

Attempt to limit problems and liability related to customers' excessive drinking by taking steps such as persuading customers to stop drinking, or ordering taxis or other transportation for intoxicated patrons.

Top Work Activities

Performing for or Working Directly with the Public

Establishing and Maintaining Interpersonal Relationships

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

Sales and Marketing

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 3,340 | 3,746 | 12.16 | 406 | 1,190 | 1,596 | \$15,294 | \$17,395 | \$18,446 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Combined Food Preparation and Serving Workers, Including Fast Food

35-3021 | Marketing, Sales, Service & Tourism

Conventional

Exceptional Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Caterers Aide; Deli Clerk; Mess Attendant

Occupational Description

Perform duties which combine both food preparation and food service.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Serve customers in eating places that specialize in fast service and inexpensive carry-out food.

Accept payment from customers, and make change as necessary.

Request and record customer orders, and compute bills using cash registers, multicounting machines, or pencil and paper.

Clean and organize eating, service, and kitchen areas.

Notify kitchen personnel of shortages or special orders.

Top Work Activities

Performing for or Working Directly with the Public

Getting Information

Training and Teaching Others

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

English Language

Food Production

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 6,350 | 7,574 | 19.28 | 1,224 | 1,347 | 2,571 | \$15,419 | \$17,294 | \$18,231 |

Counter Attendants, Cafeteria, Food Concession, and Coffee Shop

35-3022 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Canteen Operator; Snack Bar Attendant; Hot Dog Attendant

Occupational Description

Serve food to diners at counter or from a steam table. Include counter attendants who also wait tables with "Waiters and Waitresses" (35-3031).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Serve food, beverages, or desserts to customers in such settings as take-out counters of restaurants or lunchrooms, business or industrial establishments, hotel rooms, and cars.

Prepare bills for food, using cash registers, calculators, or adding machines, and accept payment or make change.

Cook food or prepare food items, such as sandwiches, salads, and ice cream dishes, using standard formulas or following directions.

Perform cleaning duties such as sweeping, mopping, and washing dishes, to keep equipment and facilities sanitary.

Balance receipts and payments in cash registers.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Active Listening

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,117 | 1,196 | 7.07 | 79 | 820 | 899 | \$15,729 | \$19,446 | \$21,305 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Waiters and Waitresses

35-3031 | Marketing, Sales, Service & Tourism

Social

High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Cocktail Waiter; Wine Steward; Head Waitress

Occupational Description

Take orders and serve food and beverages to patrons at tables in dining establishment. Exclude "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Check with customers to ensure that they are enjoying their meals and take action to correct any problems.

Collect payments from customers.

Write patrons' food orders on order slips, memorize orders, or enter orders into computers for transmittal to kitchen staff.

Prepare checks that itemize and total meal costs and sales taxes.

Take orders from patrons for food or beverages.

Top Work Activities

Performing for or Working Directly with the Public

Performing General Physical Activities

Getting Information

Top Skills

Active Listening

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

Food Production

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 7,036 | 7,878 | 11.97 | 842 | 3,884 | \$15,219 | \$17,337 | \$18,396 |

Food Servers, Nonrestaurant

35-3041 | Marketing, Sales, Service & Tourism

Social

Avg to Above Avg Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Curb Attendant; Hospital Tray-Service Worker; Room Service Clerk

Occupational Description

Serve food to patrons outside of a restaurant environment, such as in hotels, hospital rooms, or cars. Exclude "Door-to-Door Sales Workers, News and Street Vendors, and Related Workers" (41-9091) and "Counter Attendants, Cafeteria, Food Concession, and Coffee Shop" (35-3022).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor food distribution, ensuring that meals are delivered to the correct recipients and that guidelines such as those for special diets are followed.

Clean and sterilize dishes, kitchen utensils, equipment, and facilities.

Examine trays to ensure that they contain required items.

Place food servings on plates and trays according to orders or instructions.

Load trays with accessories such as eating utensils, napkins, and condiments.

Top Work Activities

Getting Information

Inspecting Equipment, Structures, or Material

Identifying Objects, Actions, and Events

Top Skills

Active Listening

Monitoring

Speaking

Top Knowledge

Customer and Personal Service

English Language

Food Production

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 549 | 611 | 11.29 | 62 | 94 | \$16,786 | \$20,258 | \$21,994 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Dining Room and Cafeteria Attendants and Bartender Helpers

35-9011 | Marketing, Sales, Service & Tourism | Realistic | Avg to Above Avg Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Busser; Lunchroom Attendant; Tray Setter

Occupational Description

Facilitate food service. Clean tables, carry dirty dishes, replace soiled table linens; set tables; replenish supply of clean linens, silverware, glassware, and dishes; supply service bar with food, and serve water, butter, and coffee to patrons.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Wipe tables and seats with dampened cloths, and replace dirty tablecloths.

Set tables with clean linens, condiments, and other supplies.

Scrape and stack dirty dishes, and carry dishes and other tableware to kitchens for cleaning.

Clean up spilled food, drink and broken dishes, and remove empty bottles and trash.

Perform serving, cleaning, and stocking duties in establishments such as cafeterias or dining rooms in order to facilitate customer service.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Service Orientation

Social Perceptiveness

Active Listening

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | = Total Openings | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|------------------|----------------|-------------|
| 881 | 972 | 10.33 | 91 | 382 | \$15,114 | \$18,631 |

Dishwashers

35-9021 | Marketing, Sales, Service & Tourism | Realistic | Very High Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Kitchen Cleaner; Glass Washer; Pot Washer

Occupational Description

Clean dishes, kitchen, food preparation equipment, or utensils.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Wash dishes, glassware, flatware, pots, and/or pans using dishwashers or by hand.

Place clean dishes, utensils, and cooking equipment in storage areas.

Maintain kitchen work areas, equipment, and utensils in clean and orderly condition.

Stock supplies such as food and utensils in serving stations, cupboards, refrigerators, and salad bars.

Sweep and scrub floors.

Top Work Activities

Handling and Moving Objects

Controlling Machines and Processes

Monitor Processes, Materials, or Surroundings

Top Skills

Time Management

Active Listening

Monitoring

Top Knowledge

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | = Total Openings | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|------------------|----------------|-------------|
| 1,125 | 1,305 | 16.00 | 180 | 463 | \$15,142 | \$17,292 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop

35-9031 | Marketing, Sales, Service & Tourism

Enterprising | High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Maitre D'; Dining Room Host

Occupational Description

Welcome patrons, seat them at tables or in lounge, and help ensure quality of facilities and service.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Greet guests and seat them at tables or in waiting areas.

Provide guests with menus.

Assign patrons to tables suitable for their needs and according to rotation so that servers receive an appropriate number of seatings.

Speak with patrons to ensure satisfaction with food and service, to respond to complaints, or to make conversation.

Answer telephone calls and respond to inquiries or transfer calls.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

English Language

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,079 | 1,214 | 12.51 | 135 | 751 | 886 | \$15,149 | \$16,458 | \$17,113 |

First-Line Supervisors/Managers of Housekeeping and Janitorial Workers

37-1011 | Marketing, Sales, Service & Tourism

Enterprising | Below Average Growth

SOME SKILL

Alternate Job Title(s): Building Superintendent; Household Manager; Housekeeping Supervisor

Occupational Description

Supervise work activities of cleaning personnel in hotels, hospitals, offices, and other establishments.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Direct activities for stopping the spread of infections in facilities such as hospitals.

Inspect work performed to ensure that it meets specifications and established standards.

Plan and prepare employee work schedules.

Perform or assist with cleaning duties as necessary.

Investigate complaints about service and equipment, and take corrective action.

Top Work Activities

Getting Information

Coordinating the Work and Activities of Others

Inspecting Equipment, Structures, or Material

Top Skills

Speaking

Social Perceptiveness

Monitoring

Top Knowledge

Mechanical

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 678 | 703 | 3.69 | 25 | 70 | 95 | \$24,553 | \$33,960 | \$38,664 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers

37-1012 | Natural Resources & Mining

Enterprising

Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Landscape Contractor; Golf Course Superintendent; Nursery Supervisor

Occupational Description

Plan, organize, direct, or coordinate activities of workers engaged in landscaping or groundskeeping activities, such as planting and maintaining ornamental trees, shrubs, flowers, and lawns, and applying fertilizers, pesticides, and other chemicals, according to contract specifications. May also coordinate activities of workers engaged in terracing hillsides, building retaining walls, constructing pathways, installing patios, and similar activities in following a landscape design plan. Work may involve reviewing contracts to ascertain service, machine, and work force requirements; answering inquiries from potential customers regarding methods, material, and price ranges; and preparing estimates according to labor, material, and machine costs.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Establish and enforce operating procedures and work standards that will ensure adequate performance and personnel safety.

Inspect completed work to ensure conformance to specifications, standards, and contract requirements.

Direct activities of workers who perform duties such as landscaping, cultivating lawns, or pruning trees and shrubs.

Schedule work for crews depending on work priorities, crew and equipment availability, and weather conditions.

Plant and maintain vegetation through activities such as mulching, fertilizing, watering, mowing, and pruning.

Top Work Activities

Inspecting Equipment, Structures, or Material

Operating Vehicles, Mechanized Devices, or Equipment

Coordinating the Work and Activities of Others

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Administration and Management

Public Safety and Security

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 430 | 479 | 11.40 | 49 | 47 | 96 | \$25,790 | \$40,238 | \$47,462 |

Janitors and Cleaners, Except Maids and Housekeeping Cleaners

37-2011 | Business Management, Administration & Finance

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Floor Cleaner; Building Custodian; Window Washer

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor building security and safety by performing such tasks as locking doors after operating hours and checking electrical appliance use to ensure that hazards are not created.

Service, clean, and supply restrooms.

Gather and empty trash.

Clean building floors by sweeping, mopping, scrubbing, or vacuuming them.

Follow procedures for the use of chemical cleaners and power equipment to prevent damage to floors and fixtures.

Top Work Activities

Inspecting Equipment, Structures, or Material

Performing General Physical Activities

Handling and Moving Objects

Top Skills

Critical Thinking

Active Listening

Coordination

Top Knowledge

Public Safety and Security

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 7,624 | 7,755 | 1.72 | 131 | 1,441 | 1,572 | \$16,881 | \$23,227 | \$26,400 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Maids and Housekeeping Cleaners

37-2012 | Marketing, Sales, Service & Tourism

Realistic

Declining Growth

LOW SKILL

Alternate Job Title(s): Bed Maker; Chamber Maid; Housekeeper

Occupational Description

Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels, restaurants, and hospitals, in a clean and orderly manner. Duties include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Carry linens, towels, toilet items, and cleaning supplies, using wheeled carts.

Clean rooms, hallways, lobbies, lounges, restrooms, corridors, elevators, stairways, locker rooms, and other work areas so that health standards are met.

Empty wastebaskets, empty and clean ashtrays, and transport other trash and waste to disposal areas.

Replenish supplies, such as drinking glasses, linens, writing supplies, and bathroom items.

Keep storage areas and carts well-stocked, clean, and tidy.

Top Work Activities

Getting Information

Performing General Physical Activities

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Service Orientation

Social Perceptiveness

Top Knowledge

Customer and Personal Service

English Language

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 4,971 | 4,868 | -2.07 | 0 | 892 | 892 | \$15,746 | \$18,689 | \$20,160 |

Landscaping and Groundskeeping Workers

37-3011 | Natural Resources & Mining

Realistic

Very High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Landscape Gardener; Outdoor Sprinkler Installer; Greenskeeper

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate vehicles and powered equipment, such as mowers, tractors, twin-axle vehicles, snow blowers, chain saws, electric clippers, sod cutters, and pruning saws.

Mow and edge lawns, using power mowers and edgers.

Shovel snow from walks, driveways, and parking lots, and spread salt in those areas.

Care for established lawns by mulching, aerating, weeding, grubbing and removing thatch, and trimming and edging around flower beds, walks, and walls.

Use hand tools such as shovels, rakes, pruning saws, saws, hedge and brush trimmers, and axes.

Top Work Activities

Performing General Physical Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Top Skills

Operation and Control

Active Listening

Speaking

Top Knowledge

Mechanical

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 2,492 | 2,860 | 14.77 | 368 | 300 | 668 | \$17,249 | \$25,611 | \$29,792 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Pesticide Handlers, Sprayers, and Applicators, Vegetation

37-3012 | Natural Resources & Mining | Realistic | High Growth

SOME SKILL

Alternate Job Title(s): Fruit Sprayer; Weed Controller

Occupational Description

Mix or apply pesticides, herbicides, fungicides, or insecticides through sprays, dusts, vapors, soil incorporation or chemical application on trees, shrubs, lawns, or botanical crops. Usually requires specific training and State or Federal certification. Exclude "Commercial Pilots" (53-2012) who operate aviation equipment to dust or spray crops.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Fill sprayer tanks with water and chemicals, according to formulas.

Mix pesticides, herbicides, and fungicides for application to trees, shrubs, lawns, or botanical crops.

Cover areas to specified depths with pesticides, applying knowledge of weather conditions, droplet sizes, elevation-to-distance ratios, and obstructions.

Lift, push, and swing nozzles, hoses, and tubes in order to direct spray over designated areas.

Start motors and engage machinery, such as sprayer agitators and pumps or portable spray equipment.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Monitor Processes, Materials, or Surroundings

Identifying Objects, Actions, and Events

Top Skills

Active Listening

Critical Thinking

Time Management

Top Knowledge

Customer and Personal Service

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 238 | 270 | 13.45 | 32 | 29 | 61 | \$22,148 | \$27,914 | \$30,797 |

Tree Trimmers and Pruners

37-3013 | Natural Resources & Mining | Realistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Tree Doctor; Grape Vine Pruner

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Supervise others engaged in tree trimming work and train lower-level employees.

Operate boom trucks, loaders, stump chippers, brush chippers, tractors, power saws, trucks, sprayers, and other equipment and tools.

Climb trees, using climbing hooks and belts, or climb ladders to gain access to work areas.

Clean, sharpen, and lubricate tools and equipment.

Cut away dead and excess branches from trees, or clear branches around power lines, using climbing equipment or buckets of extended truck booms, and/or chainsaws, hooks, handsaws, shears, and clippers.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Controlling Machines and Processes

Performing General Physical Activities

Top Skills

Operation and Control

Operation Monitoring

Active Listening

Top Knowledge

Mechanical

Customer and Personal Service

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 73 | 95 | 30.14 | 22 | 9 | 31 | \$18,507 | \$30,897 | \$37,093 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Gaming Supervisors

39-1011 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Executive Casino Host; Table Games Supervisor; Pit Boss

Occupational Description

Supervise gaming operations and personnel in an assigned area. Circulate among tables and observe operations. Ensure that stations and games are covered for each shift. May explain and interpret operating rules of house to patrons. May plan and organize activities and create friendly atmosphere for guests in hotels/casinos. May adjust service complaints. Exclude "Slot Key Persons" (39-1012).

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Monitor game operations to ensure that house rules are followed, that tribal, state, and federal regulations are adhered to, and that employees provide prompt and courteous service.
- Observe gamblers' behavior for signs of cheating, such as marking, switching, or counting cards, and notify security staff of suspected cheating.
- Maintain familiarity with the games at a facility, and with strategies and tricks used by cheaters at such games.
- Perform paperwork required for monetary transactions.
- Resolve customer and employee complaints.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Performing for or Working Directly with the Public
- Resolving Conflicts and Negotiating with Others

Top Skills

- Monitoring
- Active Listening
- Speaking

Top Knowledge

- Customer and Personal Service
- Mathematics
- Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 179 | 198 | 10.61 | 19 | 41 | 60 | \$22,684 | \$36,624 | \$43,594 |

Slot Key Persons

39-1012 | Marketing, Sales, Service & Tourism | Realistic | Below Average Growth

SOME SKILL

Alternate Job Title(s): Slot Floor Person

Occupational Description

Coordinate/supervise functions of slot department workers to provide service to patrons. Handle and settle complaints of players. Verify and payoff jackpots. Reset slot machines after payoffs. Make minor repairs or adjustments to slot machines. Recommend removal of slot machines for repair. Report hazards and enforces safety rules.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Monitor payment of hand-delivered jackpots to ensure promptness.
- Monitor functioning of slot machine coin dispensers and fill coin hoppers when necessary.
- Respond to and resolve patrons' complaints.
- Patrol assigned areas to ensure that players are following rules and that machines are functioning correctly.
- Reset slot machines after payoffs.

Top Work Activities

- Getting Information
- Making Decisions and Solving Problems
- Evaluating Information to Determine Compliance with Standards

Top Skills

- Speaking
- Monitoring
- Active Listening

Top Knowledge

- Customer and Personal Service
- Mathematics
- Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 70 | 71 | 1.43 | 1 | 16 | 17 | \$25,762 | \$30,248 | \$32,491 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Personal Service Workers

39-1021 | Marketing, Sales, Service & Tourism

Enterprising

Avg to Above Avg Growth

HIGH DEMAND**MEDIUM SKILL**

Alternate Job Title(s): Caddymaster; Barber Shop Manager; Health Club Manager

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Assign work schedules, following work requirements, to ensure quality and timely delivery of service.

Inspect work areas and operating equipment to ensure conformance to established standards in areas such as cleanliness and maintenance.

Train workers in proper operational procedures and functions, and explain company policies.

Observe and evaluate workers' appearance and performance to ensure quality service and compliance with specifications.

Meet with managers and other supervisors to stay informed of changes affecting operations.

Top Work Activities

Performing for or Working Directly with the Public

Making Decisions and Solving Problems

Getting Information

Top Skills

Active Listening

Social Perceptiveness

Speaking

Top Knowledge

Administration and Management

English Language

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 770 | 857 | 11.30 | 87 | 210 | 297 | \$26,858 | \$40,701 | \$47,623 |

Nonfarm Animal Caretakers

39-2021 | Natural Resources & Mining

Realistic

Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Dog Groomer; Kennel Worker; Stable Attendant

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Feed and water animals according to schedules and feeding instructions.

Clean, organize, and disinfect animal quarters such as pens, stables, cages, and yards, and animal equipment such as saddles and bridles.

Answer telephones and schedule appointments.

Examine and observe animals to detect signs of illness, disease, or injury.

Respond to questions from patrons, and provide information about animals, such as behavior, habitat, breeding habits, or facility activities.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Performing for or Working Directly with the Public

Top Skills

Active Listening

Speaking

Coordination

Top Knowledge

Customer and Personal Service

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 332 | 367 | 10.54 | 35 | 72 | 107 | \$15,670 | \$19,306 | \$21,124 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Gaming Dealers

39-3011 | Marketing, Sales, Service & Tourism

Conventional | Avg to Above Avg Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Blackjack Dealer; Roulette Dealer; Craps Dealer

Occupational Description

Operate table games. Stand or sit behind table and operate games of chance by dispensing the appropriate number of cards or blocks to players, or operating other gaming equipment. Compare the house's hand against players' hands and payoff or collect players' money or chips.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Exchange paper currency for playing chips or coin money.

Pay winnings or collect losing bets as established by the rules and procedures of a specific game.

Deal cards to house hands, and compare these with players' hands to determine winners, as in black jack.

Conduct gambling games such as dice, roulette, cards, or keno, following all applicable rules and regulations.

Check to ensure that all players have placed bets before play begins.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Supervisors, Peers, or Subordinates

Identifying Objects, Actions, and Events

Top Skills

Speaking

Active Listening

Monitoring

Top Knowledge

Mathematics

Customer and Personal Service

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,153 | 1,261 | 9.37 | 108 | 489 | 597 | \$15,185 | \$20,657 | \$23,394 |

Motion Picture Projectionists

39-3021 | Arts, AV Technology & Communications

Realistic | Declining Growth

LOW SKILL

Alternate Job Title(s): Chief Projectionist; Film Projector Operator

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Insert film into top magazine reel, or thread film through a series of sprockets and guide rollers, attaching the end to a take-up reel.

Start projectors and open shutters to project images onto screens.

Monitor operations to ensure that standards for sound and image projection quality are met.

Operate equipment in order to show films in a number of theaters simultaneously.

Splice separate film reels, advertisements, and movie trailers together to form a feature-length presentation on one continuous reel.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Monitor Processes, Materials, or Surroundings

Top Skills

Operation Monitoring

Operation and Control

Active Listening

Top Knowledge

Mechanical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 76 | 74 | -2.63 | 0 | 32 | 32 | \$14,960 | \$17,921 | \$19,401 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Ushers, Lobby Attendants, and Ticket Takers

39-3031 | Arts, A/V Technology & Communications | Social | Avg to Above Avg Growth

LOW SKILL

Alternate Job Title(s): Door Attendant; Ticket Collector

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Sell and collect admission tickets and passes from patrons at entertainment events.
- Greet patrons attending entertainment events.
- Examine tickets or passes to verify authenticity, using criteria such as color and date issued.
- Guide patrons to exits or provide other instructions or assistance in case of emergency.
- Maintain order and ensure adherence to safety rules.

Top Work Activities

- Performing for or Working Directly with the Public
- Getting Information
- Making Decisions and Solving Problems

Top Skills

- Social Perceptiveness
- Active Listening
- Speaking

Top Knowledge

- Customer and Personal Service
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 123 | 136 | 10.57 | 13 | 78 | 91 | \$15,106 | \$16,516 | \$17,221 |

Amusement and Recreation Attendants

39-3091 | Marketing, Sales, Service & Tourism | Enterprising | High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Arcade Attendant; Golf Course Starter; Caddy

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Provide information about facilities, entertainment options, and rules and regulations.
- Record details of attendance, sales, receipts, reservations, or repair activities.
- Monitor activities to ensure adherence to rules and safety procedures, or arrange for the removal of unruly patrons.
- Sell tickets and collect fees from customers.
- Keep informed of shut-down and emergency evacuation procedures.

Top Work Activities

- Establishing and Maintaining Interpersonal Relationships
- Communicating with Supervisors, Peers, or Subordinates
- Inspecting Equipment, Structures, or Material

Top Skills

- Speaking
- Active Listening
- Social Perceptiveness

Top Knowledge

- Customer and Personal Service
- Public Safety and Security
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 757 | 846 | 11.76 | 89 | 392 | 481 | \$15,252 | \$17,291 | \$18,310 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Funeral Attendants

39-4021 | Marketing, Sales, Service & Tourism

Social

High Growth

LOW SKILL

Alternate Job Title(s): Mortician Helper; Pallbearer

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Perform a variety of tasks during funerals to assist funeral directors and to ensure that services run smoothly and as planned.

Greet people at the funeral home.

Offer assistance to mourners as they enter or exit limousines.

Close caskets at appropriate point in services.

Transfer the deceased to funeral homes.

Top Work Activities

Performing for or Working Directly with the Public

Assisting and Caring for Others

Getting Information

Top Skills

Speaking

Service Orientation

Active Listening

Top Knowledge

Customer and Personal Service

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 137 | 153 | 11.68 | 16 | 65 | 81 | \$17,865 | \$24,450 | \$27,742 |

Barbers

39-5011 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Barber Apprentice; Hair Cutter

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean and sterilize scissors, combs, clippers, and other instruments.

Cut and trim hair according to clients' instructions and/or current hairstyles, using clippers, combs, hand-held blow driers, and scissors.

Drape and pin protective cloths around customers' shoulders.

Question patrons regarding desired services and haircut styles.

Clean work stations and sweep floors.

Top Work Activities

Performing for or Working Directly with the Public

Establishing and Maintaining Interpersonal Relationships

Thinking Creatively

Top Skills

Active Listening

Speaking

Monitoring

Top Knowledge

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 143 | 154 | 7.69 | 11 | 21 | 32 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Hairdressers, Hairstylists, and Cosmetologists

39-5012 | Marketing, Sales, Service & Tourism | Artistic | Below Average Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Beautician; Wig Stylist; Electrologist

Occupational Description

Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May also apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Keep work stations clean and sanitize tools such as scissors and combs.

Cut, trim and shape hair or hairpieces, based on customers' instructions, hair type and facial features, using clippers, scissors, trimmers and razors.

Analyze patrons' hair and other physical features to determine and recommend beauty treatment or suggest hair styles.

Schedule client appointments.

Bleach, dye, or tint hair, using applicator or brush.

Top Work Activities

Performing for or Working Directly with the Public

Thinking Creatively

Updating and Using Relevant Knowledge

Top Skills

Active Listening

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

English Language

Chemistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 2,140 | 2,312 | 8.04 | 172 | 314 | 486 | \$16,399 | \$23,278 | \$26,718 |

Manicurists and Pedicurists

39-5092 | Marketing, Sales, Service & Tourism | Realistic | Below Average Growth | **MEDIUM SKILL**

Alternate Job Title(s): Fingernail Sculptor

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean and sanitize tools and work environment.

Schedule client appointments and accept payments.

Remove previously applied nail polish, using liquid remover and swabs.

Clean customers' nails in soapy water, using swabs, files, and orange sticks.

Shape and smooth ends of nails, using scissors, files, and emery boards.

Top Work Activities

Performing for or Working Directly with the Public

Establishing and Maintaining Interpersonal Relationships

Updating and Using Relevant Knowledge

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Sales and Marketing

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 154 | 163 | 5.84 | 9 | 22 | 31 | \$25,340 | \$28,646 | \$30,299 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Skin Care Specialists

39-5094 | Marketing, Sales, Service & Tourism

Enterprising

Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Esthetician

Occupational Description

Provide skin care treatments to face and body to enhance an individual's appearance.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sterilize equipment and clean work areas.

Keep records of client needs and preferences and the services provided.

Demonstrate how to clean and care for skin properly and recommend skin-care regimens.

Examine clients' skin, using magnifying lamps or visors when necessary, to evaluate skin condition and appearance.

Select and apply cosmetic products such as creams, lotions, and tonics.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Selling or Influencing Others

Updating and Using Relevant Knowledge

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Sales and Marketing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|-------|----------------|-------------|
| 68 | 81 | 19.12 | 13 | 10 | 23 | N/A | N/A | N/A |

Baggage Porters and Bellhops

39-6011 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

LOW SKILL

Alternate Job Title(s): Baggage Handler; Lobby Porter; Skycap

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Transfer luggage, trunks, and packages to and from rooms, loading areas, vehicles, or transportation terminals, by hand or using baggage carts.

Greet incoming guests and escort them to their rooms.

Receive and mark baggage by completing and attaching claim checks.

Supply guests or travelers with directions, travel information, and other information such as available services and points of interest.

Assist physically challenged travelers and other guests with special needs.

Top Work Activities

Handling and Moving Objects

Performing for or Working Directly with the Public

Performing General Physical Activities

Top Skills

Service Orientation

Active Listening

Speaking

Top Knowledge

Customer and Personal Service

English Language

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 66 | 70 | 6.06 | 4 | 17 | 21 | \$15,640 | \$18,688 | \$20,212 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Child Care Workers

39-9011 | Healthcare & Human Services | Social | Below Average Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Baby Sitter; Governess; Nanny

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Maintain a safe play environment.
- Dress children and change diapers.
- Observe and monitor children's play activities.
- Communicate with children's parents or guardians about daily activities, behaviors, and related issues.
- Sanitize toys and play equipment.

Top Work Activities

- Assisting and Caring for Others
- Communicating with Supervisors, Peers, or Subordinates
- Getting Information

Top Skills

- Speaking
- Monitoring
- Service Orientation

Top Knowledge

- Customer and Personal Service
- Psychology
- Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 4,283 | 4,446 | 3.81 | 163 | 1,416 | \$15,299 | \$17,436 | \$18,505 |

Personal and Home Care Aides

39-9021 | Healthcare & Human Services | Social | Exceptional Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Blind Escort; Caregiver; Geriatric Aide

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Administer bedside and personal care, such as ambulation and personal hygiene assistance.
- Prepare and maintain records of client progress and services performed, reporting changes in client condition to manager or supervisor.
- Perform housekeeping duties, such as cooking, cleaning, washing clothes and dishes, and running errands.
- Care for individuals and families during periods of incapacitation, family disruption or convalescence, providing companionship, personal care and help in adjusting to new lifestyles.
- Perform health care related tasks, such as monitoring vital signs and medication, under the direction of registered nurses and physiotherapists.

Top Work Activities

- Assisting and Caring for Others
- Getting Information
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Service Orientation
- Active Listening
- Social Perceptiveness

Top Knowledge

- Customer and Personal Service
- Public Safety and Security
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 1,513 | 1,906 | 25.97 | 393 | 189 | \$16,456 | \$20,400 | \$22,373 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Fitness Trainers and Aerobics Instructors

39-9031 | Education & Training | Social | Very High Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Exercise Teacher; Personal Trainer; Yoga Teacher

Occupational Description

Instruct or coach groups or individuals in exercise activities and the fundamentals of sports. Demonstrate techniques and methods of participation. Observe participants and inform them of corrective measures necessary to improve their skills. Those required to hold teaching degrees should be reported in the appropriate teaching category. Exclude "Athletic Trainers" (29-9091).

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe participants and inform them of corrective measures necessary for skill improvement.

Instruct participants in maintaining exertion levels to maximize benefits from exercise routines.

Offer alternatives during classes to accommodate different levels of fitness.

Plan routines, choose appropriate music, and choose different movements for each set of muscles, depending on participants' capabilities and limitations.

Teach proper breathing techniques used during physical exertion.

Top Work Activities

Performing General Physical Activities

Updating and Using Relevant Knowledge

Establishing and Maintaining Interpersonal Relationships

Top Skills

Instructing

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

Education and Training

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 608 | 702 | 15.46 | 94 | 109 | 203 | \$15,869 | \$21,555 | \$24,398 |

Recreation Workers

39-9032 | Marketing, Sales, Service & Tourism | Social | Avg to Above Avg Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Camp Counselor; Playground Director; Activities Director

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Enforce rules and regulations of recreational facilities to maintain discipline and ensure safety.

Manage the daily operations of recreational facilities.

Administer first aid according to prescribed procedures, and notify emergency medical personnel when necessary.

Organize, lead, and promote interest in recreational activities such as arts, crafts, sports, games, camping, and hobbies.

Greet new arrivals to activities, introducing them to other participants, explaining facility rules, and encouraging participation.

Top Work Activities

Assisting and Caring for Others

Communicating with Supervisors, Peers, or Subordinates

Organizing, Planning, and Prioritizing Work

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

English Language

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,232 | 1,354 | 9.90 | 122 | 222 | 344 | \$15,929 | \$22,543 | \$25,850 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Residential Advisors

39-9041 | Healthcare & Human Services | Social | Below Average Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Dormitory Supervisor; House Parent

Occupational Description

Coordinate activities for residents of boarding schools, college fraternities or sororities, college dormitories, or similar establishments. Order supplies and determine need for maintenance, repairs, and furnishings. May maintain household records and assign rooms. May refer residents to counseling resources if needed.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Enforce rules and regulations to ensure the smooth and orderly operation of dormitory programs.
- Provide emergency first aid and summon medical assistance when necessary.
- Mediate interpersonal problems between residents.
- Administer, coordinate, or recommend disciplinary and corrective actions.
- Communicate with other staff to resolve problems with individual students.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Establishing and Maintaining Interpersonal Relationships
- Getting Information

Top Skills

- Social Perceptiveness
- Active Listening
- Speaking

Top Knowledge

- Psychology
- Customer and Personal Service
- Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 757 | 805 | 6.34 | 48 | 268 | 316 | \$17,789 | \$20,956 | \$22,539 |

First-Line Supervisors/Managers of Retail Sales Workers

41-1011 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Department Manager; Flower Shop Manager; Supervisor of Cashiers

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Provide customer service by greeting and assisting customers, and responding to customer inquiries and complaints.
- Direct and supervise employees engaged in sales, inventory-taking, reconciling cash receipts, or in performing services for customers.
- Monitor sales activities to ensure that customers receive satisfactory service and quality goods.
- Inventory stock and reorder when inventory drops to a specified level.
- Instruct staff on how to handle difficult and complicated sales.

Top Work Activities

- Performing for or Working Directly with the Public
- Getting Information
- Organizing, Planning, and Prioritizing Work

Top Skills

- Active Listening
- Speaking
- Critical Thinking

Top Knowledge

- Customer and Personal Service
- Sales and Marketing
- Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 3,541 | 3,747 | 5.82 | 206 | 760 | 966 | \$22,805 | \$34,975 | \$41,061 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Non-Retail Sales Workers

41-1012 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): District Sales Manager; Dry Cleaning Manager; Blood-Donor Recruiter Supervisor

Occupational Description

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.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Listen to and resolve customer complaints regarding services, products, or personnel.

Monitor sales staff performance to ensure that goals are met.

Hire, train, and evaluate personnel.

Confer with company officials to develop methods and procedures to increase sales, expand markets, and promote business.

Direct and supervise employees engaged in sales, inventory-taking, reconciling cash receipts, or performing specific services, such as pumping gasoline for customers.

| | | |
|--|-----------------------|-------------------------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Interacting with Computers | Speaking | Sales and Marketing |
| Establishing and Maintaining Interpersonal Relationships | Social Perceptiveness | English Language |
| Organizing, Planning, and Prioritizing Work | Coordination | Customer and Personal Service |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
| 911 | 945 | 3.73 | 34 | 189 | 223 | \$33,758 | \$51,815 | \$60,844 |

Cashiers

41-2011 | Marketing, Sales, Service & Tourism | Conventional | Below Average Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Auction Clerk; Toll Collector; Disbursement Clerk

Occupational Description

Receive and disburse money in establishments other than financial institutions. Usually involves use of electronic scanners, cash registers, or related equipment. Often involved in processing credit or debit card transactions and validating checks.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Receive payment by cash, check, credit cards, vouchers, or automatic debits.

Issue receipts, refunds, credits, or change due to customers.

Assist customers by providing information and resolving their complaints.

Establish or identify prices of goods, services or admission, and tabulate bills using calculators, cash registers, or optical price scanners.

Greet customers entering establishments.

| | | |
|--|---------------------|-------------------------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Performing for or Working Directly with the Public | Active Listening | Customer and Personal Service |
| Communicating with Supervisors, Peers, or Subordinates | Speaking | Mathematics |
| Getting Information | Service Orientation | English Language |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
| 10,478 | 11,028 | 5.25 | 550 | 4,706 | 5,256 | \$14,962 | \$17,121 | \$18,201 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Gaming Change Persons and Booth Cashiers

41-2012 | Marketing, Sales, Service & Tourism | Conventional | Below Average Growth

SOME SKILL

Alternate Job Title(s): Carousel Attendant; Slot Attendant

Occupational Description

Exchange coins and tokens for patrons' money. May issue payoffs and obtain customer's signature on receipt when winnings exceed the amount held in the slot machine. May operate a booth in the slot machine area and furnish change persons with money bank at the start of the shift, or count and audit money in drawers.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Count money and audit money drawers.

Keep accurate records of monetary exchanges, authorization forms, and transaction reconciliations.

Exchange money, credit, and casino chips, and make change for customers.

Work in and monitor an assigned area on the casino floor where slot machines are located.

Listen for jackpot alarm bells and issue payoffs to winners.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Supervisors, Peers, or Subordinates

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Customer and Personal Service

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 113 | 114 | 0.89 | 1 | 51 | 52 | \$18,137 | \$22,829 | \$25,176 |

Counter and Rental Clerks

41-2021 | Marketing, Sales, Service & Tourism | Conventional | Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Airplane-Charter Clerk; Car Rental Agent; Skate Shop Attendant

Occupational Description

Receive orders for repairs, rentals, and services. May describe available options, compute cost, and accept payment.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Greet customers and discuss the type, quality and quantity of merchandise sought for rental.

Compute charges for merchandise or services and receive payments.

Answer telephones to provide information and receive orders.

Provide information about rental items, such as availability, operation or description.

Rent items, arrange for provision of services to customers and accept returns.

Top Work Activities

Interacting with Computers

Performing for or Working Directly with the Public

Getting Information

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Computers and Electronics

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 1,291 | 1,357 | 5.11 | 66 | 345 | 411 | \$15,279 | \$19,085 | \$20,988 |

Parts Salespersons

41-2022 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Parts Clerk; Auto Parts Salesperson; Electronic Parts Salesperson

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read catalogs, microfiche viewers, or computer displays in order to determine replacement part stock numbers and prices.

Determine replacement parts required, according to inspections of old parts, customer requests, or customers' descriptions of malfunctions.

Receive and fill telephone orders for parts.

Fill customer orders from stock.

Prepare sales slips or sales contracts.

Top Work Activities

Getting Information

Performing for or Working Directly with the Public

Selling or Influencing Others

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Sales and Marketing

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,332 | 1,416 | 6.31 | 84 | 471 | 555 | \$19,733 | \$29,037 | \$33,689 |

Retail Salespersons

41-2031 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Car Dealer; Haberdasher; Wallpaper Salesperson

Occupational Description

Sell merchandise, such as furniture, motor vehicles, appliances, or apparel in a retail establishment. Exclude "Cashiers" (41-2011).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Greet customers and ascertain what each customer wants or needs.

Describe merchandise and explain use, operation, and care of merchandise to customers.

Recommend, select, and help locate or obtain merchandise based on customer needs and desires.

Compute sales prices, total purchases and receive and process cash or credit payment.

Answer questions regarding the store and its merchandise.

Top Work Activities

Performing for or Working Directly with the Public

Selling or Influencing Others

Getting Information

Top Skills

Active Listening

Speaking

Persuasion

Top Knowledge

Customer and Personal Service

Sales and Marketing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 12,078 | 13,269 | 9.86 | 1,191 | 3,369 | 4,560 | \$15,862 | \$25,625 | \$30,507 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Advertising Sales Agents

41-3011 | Marketing, Sales, Service & Tourism

Enterprising | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Radio Time Salesperson; Yellow Pages Salesperson; Leasing Agent Outdoor Advertising

Occupational Description

Sell or solicit advertising, including graphic art, advertising space in publications, custom made signs, or TV and radio advertising time. May obtain leases for outdoor advertising sites or persuade retailer to use sales promotion display items.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain assigned account bases while developing new accounts.

Explain to customers how specific types of advertising will help promote their products or services in the most effective way possible.

Provide clients with estimates of the costs of advertising products or services.

Locate and contact potential clients to offer advertising services.

Process all correspondence and paperwork related to accounts.

Top Work Activities

Selling or Influencing Others

Communicating with Persons Outside Organization

Thinking Creatively

Top Skills

Social Perceptiveness

Persuasion

Active Listening

Top Knowledge

Sales and Marketing

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 542 | 537 | -0.92 | 0 | 107 | 107 | \$22,765 | \$43,903 | \$54,473 |

Insurance Sales Agents

41-3021 | Marketing, Sales, Service & Tourism

Enterprising | Very High Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Insurance Broker; Insurance Solicitor; Pension Agent

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sell various types of insurance policies to businesses and individuals on behalf of insurance companies, including automobile, fire, life, property, medical and dental insurance or specialized policies such as marine, farm/crop, and medical malpractice.

Interview prospective clients to obtain data about their financial resources and needs, the physical condition of the person or property to be insured, and to discuss any existing coverage.

Call on policyholders to deliver and explain policy, to analyze insurance program and suggest additions or changes, or to change beneficiaries.

Seek out new clients and develop clientele by networking to find new customers and generate lists of prospective clients.

Ensure that policy requirements are fulfilled, including any necessary medical examinations and the completion of appropriate forms.

Top Work Activities

Selling or Influencing Others

Communicating with Persons Outside Organization

Performing for or Working Directly with the Public

Top Skills

Active Listening

Reading Comprehension

Writing

Top Knowledge

Customer and Personal Service

Sales and Marketing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,955 | 2,293 | 17.29 | 338 | 454 | 792 | \$28,753 | \$70,585 | \$91,501 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Securities, Commodities, and Financial Services Sales Agents

41-3031 | Marketing, Sales, Service & Tourism | Enterprising | Very High Growth

HIGH DEMAND

HIGH WAGE

HIGH SKILL

Alternate Job Title(s): Investment Banker; Stock Broker; Stock Trader

Occupational Description

Buy and sell securities in investment and trading firms, or call upon businesses and individuals to sell financial services. Provide financial services, such as loan, tax, and securities counseling. May advise securities customers about such things as stocks, bonds, and market conditions.

Bachelor's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Determine customers' financial services needs and prepare proposals to sell services that address these needs.

Contact prospective customers to present information and explain available services.

Sell services or equipment, such as trusts, investments, or check processing services.

Prepare forms or agreements to complete sales.

Develop prospects from current commercial customers, referral leads, or sales or trade meetings.

Top Work Activities

Selling or Influencing Others

Making Decisions and Solving Problems

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Critical Thinking

Speaking

Top Knowledge

Customer and Personal Service

Sales and Marketing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 465 | 537 | 15.48 | 72 | 143 | 215 | \$31,684 | \$65,495 | \$82,400 |

Travel Agents

41-3041 | Marketing, Sales, Service & Tourism | Enterprising | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Travel Consultant; Travel Counselor

Occupational Description

Plan and sell transportation and accommodations for travel agency customers. Determine destination, modes of transportation, travel dates, costs, and accommodations required.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect payment for transportation and accommodations from customer.

Converse with customer to determine destination, mode of transportation, travel dates, financial considerations, and accommodations required.

Compute cost of travel and accommodations, using calculator, computer, carrier tariff books, and hotel rate books, or quote package tour's costs.

Book transportation and hotel reservations, using computer terminal or telephone.

Plan, describe, arrange, and sell itinerary tour packages and promotional travel incentives offered by various travel carriers.

Top Work Activities

Performing for or Working Directly with the Public

Getting Information

Interacting with Computers

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Geography

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 616 | 507 | -17.70 | 0 | 46 | 46 | \$17,500 | \$23,115 | \$25,922 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

41-4011 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Electronics Sales Representative; Oilfield Equipment Sales Representative; Pharmaceutical Representative

Occupational Description

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.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Contact new and existing customers to discuss their needs, and to explain how these needs could be met by specific products and services.

Answer customers' questions about products, prices, availability, product uses, and credit terms.

Quote prices, credit terms and other bid specifications.

Emphasize product features based on analyses of customers' needs, and on technical knowledge of product capabilities and limitations.

Negotiate prices and terms of sales and service agreements.

Top Work Activities

Selling or Influencing Others

Establishing and Maintaining Interpersonal Relationships

Communicating with Persons Outside Organization

Top Skills

Speaking

Persuasion

Active Listening

Top Knowledge

Sales and Marketing

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 691 | 742 | 7.38 | 51 | 160 | 211 | \$48,218 | \$85,409 | \$104,005 |

Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products

41-4012 | Marketing, Sales, Service & Tourism | Conventional | Avg to Above Avg Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Diamond Broker; Oil Distributor; Wool Merchant

Occupational Description

Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Answer customers' questions about products, prices, availability, product uses, and credit terms.

Recommend products to customers, based on customers' needs and interests.

Contact regular and prospective customers to demonstrate products, explain product features, and solicit orders.

Estimate or quote prices, credit or contract terms, warranties, and delivery dates.

Consult with clients after sales or contract signings to resolve problems and to provide ongoing support.

Top Work Activities

Establishing and Maintaining Interpersonal Relationships

Selling or Influencing Others

Getting Information

Top Skills

Speaking

Active Listening

Persuasion

Top Knowledge

Sales and Marketing

Customer and Personal Service

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 3,980 | 4,435 | 11.43 | 455 | 922 | 1,377 | \$28,172 | \$47,705 | \$57,472 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Demonstrators and Product Promoters

41-9011 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Home Demonstrator; Exhibit-Display Representative

Occupational Description

Demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product. May sell demonstrated merchandise.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Demonstrate and explain products, methods, or services in order to persuade customers to purchase products or utilize services.

Provide product samples, coupons, informational brochures, and other incentives to persuade people to buy products.

Keep areas neat while working, and return items to correct locations following demonstrations.

Record and report demonstration-related information such as the number of questions asked by the audience and the number of coupons distributed.

Sell products being promoted, and keep records of sales.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Performing for or Working Directly with the Public

Top Skills

Active Listening

Speaking

Persuasion

Top Knowledge

Sales and Marketing

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 249 | 266 | 6.83 | 17 | 72 | 89 | \$16,925 | \$23,767 | \$27,188 |

Real Estate Brokers

41-9021 | Marketing, Sales, Service & Tourism | Enterprising | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): N/A

Occupational Description

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.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sell, for a fee, real estate owned by others.

Obtain agreements from property owners to place properties for sale with real estate firms.

Monitor fulfillment of purchase contract terms to ensure that they are handled in a timely manner.

Compare a property with similar properties that have recently sold to determine its competitive market price.

Act as an intermediary in negotiations between buyers and sellers over property prices and settlement details and during the closing of sales.

Top Work Activities

Getting Information

Communicating with Persons Outside Organization

Making Decisions and Solving Problems

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Sales and Marketing

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 237 | 242 | 2.11 | 5 | 39 | 44 | \$15,261 | \$35,046 | \$44,939 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Real Estate Sales Agents

41-9022 | Marketing, Sales, Service & Tourism | Enterprising | Avg to Above Avg Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Apartment Rental Agent; Land Agent; Right of Way Agent

Occupational Description

Rent, buy, or sell property for clients. Perform duties, such as study property listings, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts. Include agents who represent buyer.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Present purchase offers to sellers for consideration.
- Act as an intermediary in negotiations between buyers and sellers, generally representing one or the other.
- Compare a property with similar properties that have recently sold to determine its competitive market price.
- Advise clients on market conditions, prices, mortgages, legal requirements and related matters.
- Promote sales of properties through advertisements, open houses, and participation in multiple listing services.

Top Work Activities

- Getting Information
- Performing for or Working Directly with the Public
- Resolving Conflicts and Negotiating with Others

Top Skills

- Active Listening
- Speaking
- Persuasion

Top Knowledge

- Sales and Marketing
- Customer and Personal Service
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 914 | 1,009 | 10.39 | 95 | 150 | 245 | \$27,131 | \$49,925 | \$61,322 |

Telemarketers

41-9041 | Marketing, Sales, Service & Tourism | Enterprising | Declining Growth | **SOME SKILL**

Alternate Job Title(s): Telephone Salesperson; Telephone Solicitor

Occupational Description

Solicit orders for goods or services over the telephone.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Deliver prepared sales talks, reading from scripts that describe products or services, in order to persuade potential customers to purchase a product or service or to make a donation.
- Contact businesses or private individuals by telephone in order to solicit sales for goods or services, or to request donations for charitable causes.
- Explain products or services and prices, and answer questions from customers.
- Obtain customer information such as name, address, and payment method, and enter orders into computers.
- Record names, addresses, purchases, and reactions of prospects contacted.

Top Work Activities

- Selling or Influencing Others
- Interacting with Computers
- Communicating with Persons Outside Organization

Top Skills

- Speaking
- Persuasion
- Active Listening

Top Knowledge

- Sales and Marketing
- English Language
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,529 | 1,235 | -19.23 | 0 | 384 | 384 | \$15,157 | \$19,881 | \$22,243 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Office and Administrative Support Workers

43-1011 | Business Management, Administration & Finance | Enterprising | Avg to Above Avg Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Claims Supervisor; Stock Room Manager; Teller Supervisor

Occupational Description

Supervise and coordinate the activities of clerical and administrative support workers.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Resolve customer complaints and answer customers' questions regarding policies and procedures.

Supervise the work of office, administrative, or customer service employees to ensure adherence to quality standards, deadlines, and proper procedures, correcting errors or problems.

Provide employees with guidance in handling difficult or complex problems and in resolving escalated complaints or disputes.

Implement corporate and departmental policies, procedures, and service standards in conjunction with management.

Discuss job performance problems with employees to identify causes and issues and to work on resolving problems.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Administration and Management

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 3,150 | 3,510 | 11.43 | 360 | 711 | 1,071 | \$28,283 | \$41,891 | \$48,694 |

Switchboard Operators, Including Answering Service

43-2011 | Business Management, Administration & Finance | Conventional | Declining Growth | **SOME SKILL**

Alternate Job Title(s): Communication Center Operator; Exchange Operator; Telephone Answering Service Operator

Occupational Description

Operate telephone business systems equipment or switchboards to relay incoming, outgoing, and interoffice calls. May supply information to callers and record messages.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate communication systems, such as telephone, switchboard, intercom, two-way radio, or public address.

Answer incoming calls, greeting callers, providing information, transferring calls and/or taking messages as necessary.

Route emergency calls appropriately.

Page individuals to inform them of telephone calls, using paging and interoffice communication equipment.

Relay and route written and verbal messages.

Top Work Activities

Getting Information

Communicating with Persons Outside Organization

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Clerical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 586 | 540 | -7.85 | 0 | 121 | 121 | \$19,366 | \$26,289 | \$29,750 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Bill and Account Collectors

43-3011 | Business Management, Administration & Finance | Conventional | High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Payment Collector; Collection Clerk; Installment Agent

Occupational Description

Locate and notify customers of delinquent accounts by mail, telephone, or personal visit to solicit payment. Duties include receiving payment and posting amount to customer's account; preparing statements to credit department if customer fails to respond; initiating repossession proceedings or service disconnection; keeping records of collection and status of accounts.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Arrange for debt repayment or establish repayment schedules, based on customers' financial situations.

Locate and notify customers of delinquent accounts by mail, telephone, or personal visits to solicit payment.

Advise customers of necessary actions and strategies for debt repayment.

Persuade customers to pay amounts due on credit accounts, damage claims, or nonpayable checks, or to return merchandise.

Confer with customers by telephone or in person to determine reasons for overdue payments and to review the terms of sales, service, or credit contracts.

Top Work Activities

Getting Information

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Clerical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 709 | 806 | 13.68 | 97 | 133 | 230 | \$19,866 | \$27,604 | \$31,473 |

Billing and Posting Clerks and Machine Operators

43-3021 | Business Management, Administration & Finance | Conventional | High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Calculating Machine Operator; Invoice Control Clerk; Rating Clerk

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Enter into machines all information needed for bill generation.

Top Work Activities

Interacting with Computers

Processing Information

Getting Information

Top Skills

Speaking

Mathematics

Active Listening

Top Knowledge

Clerical

Economics and Accounting

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,198 | 1,358 | 13.36 | 160 | 197 | 357 | \$22,627 | \$29,546 | \$33,006 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Bookkeeping, Accounting, and Auditing Clerks

43-3031 | Business Management, Administration & Finance | Conventional | Avg to Above Avg Growth | **HIGH DEMAND****MEDIUM SKILL**

Alternate Job Title(s): Accounts Receivable Clerk; Ledger Clerk; Voucher Examiner

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate computers programmed with accounting software to record, store, and analyze information.

Check figures, postings, and documents for correct entry, mathematical accuracy, and proper codes.

Classify, record, and summarize numerical and financial data to compile and keep financial records, using journals and ledgers or computers.

Debit, credit, and total accounts on computer spreadsheets and databases, using specialized accounting software.

Operate 10-key calculators, typewriters, and copy machines to perform calculations and produce documents.

Top Work Activities

Getting Information

Interacting with Computers

Processing Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 7,241 | 8,035 | 10.97 | 794 | 870 | 1,664 | \$22,969 | \$30,869 | \$34,819 |

Gaming Cage Workers

43-3041 | Marketing, Sales, Service & Tourism | Conventional | Below Average Growth |

SOME SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Follow all gaming regulations.

Maintain confidentiality of customers' transactions.

Count funds and reconcile daily summaries of transactions to balance books.

Convert gaming checks, coupons, tokens, and coins to currency for gaming patrons.

Maintain cage security.

Top Work Activities

Performing for or Working Directly with the Public

Getting Information

Identifying Objects, Actions, and Events

Top Skills

Mathematics

Speaking

Active Listening

Top Knowledge

Mathematics

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 80 | 82 | 2.50 | 2 | 15 | 17 | \$18,469 | \$22,053 | \$23,845 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Payroll and Timekeeping Clerks

43-3051 | Business Management, Administration & Finance | Conventional | Declining Growth |

SOME SKILL

Alternate Job Title(s): Attendance Clerk; Payroll Bookkeeper; Timekeeper

Occupational Description

Compile and post employee time and payroll data. May compute employees' time worked, production, and commission. May compute and post wages and deductions. May prepare paychecks.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Review time sheets, work charts, wage computation, and other information to detect and reconcile payroll discrepancies.

Process paperwork for new employees and enter employee information into the payroll system.

Verify attendance, hours worked, and pay adjustments, and post information onto designated records.

Compute wages and deductions, and enter data into computers.

Record employee information, such as exemptions, transfers, and resignations, to maintain and update payroll records.

Top Work Activities

Interacting with Computers

Getting Information

Performing Administrative Activities

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

Personnel and Human Resources

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|------------------|----------|----------------|-------------|
| 425 | 396 | -6.82 | 0 | 101 | \$25,968 | \$33,669 | \$37,519 |

Procurement Clerks

43-3061 | Business Management, Administration & Finance | Conventional | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): Property and Supply Officer; Purchasing Clerk

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare purchase orders and send copies to suppliers and to departments originating requests.

Determine if inventory quantities are sufficient for needs, ordering more materials when necessary.

Respond to customer and supplier inquiries about order status, changes, or cancellations.

Perform buying duties when necessary.

Contact suppliers in order to schedule or expedite deliveries and to resolve shortages, missed or late deliveries, and other problems.

Top Work Activities

Getting Information

Interacting with Computers

Establishing and Maintaining Interpersonal Relationships

Top Skills

Reading Comprehension

Speaking

Critical Thinking

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacements Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|--------------------------------|------------------|----------|----------------|-------------|
| 228 | 240 | 5.26 | 12 | 70 | \$23,519 | \$33,879 | \$39,059 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Tellers

43-3071 | Business Management, Administration & Finance | Conventional | Very High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Foreign Exchange Clerk; Money Order Clerk; Securities Teller

Occupational Description

Receive and pay out money. Keep records of money and negotiable instruments involved in a financial institution's various transactions.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Cash checks and pay out money after verifying that signatures are correct, that written and numerical amounts agree, and that accounts have sufficient funds.

Receive checks and cash for deposit, verify amounts, and check accuracy of deposit slips.

Enter customers' transactions into computers to record transactions and issue computer-generated receipts.

Balance currency, coin, and checks in cash drawers at ends of shifts, and calculate daily transactions using computers, calculators, or adding machines.

Examine checks for endorsements and to verify other information such as dates, bank names, identification of the persons receiving payments and the legality of the documents.

Top Work Activities

Interacting with Computers

Getting Information

Evaluating Information to Determine Compliance with Standards

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Customer and Personal Service

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 2,526 | 2,948 | 16.71 | 422 | 1,039 | 1,461 | \$19,368 | \$24,916 | \$27,690 |

Correspondence Clerks

43-4021 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Collection Correspondent; Fan Mail Editor

Occupational Description

Compose letters in reply to requests for merchandise, damage claims, credit and other information, delinquent accounts, incorrect billings, or unsatisfactory services. Duties may include gathering data to formulate reply and typing correspondence.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare documents and correspondence such as damage claims, credit and billing inquiries, invoices, and service complaints.

Compile data from records to prepare periodic reports.

Present clear and concise explanations of governing rules and regulations.

Read incoming correspondence to ascertain nature of writers' concerns and to determine disposition of correspondence.

Type acknowledgment letters to persons sending correspondence.

Top Work Activities

Interacting with Computers

Organizing, Planning, and Prioritizing Work

Getting Information

Top Skills

Writing

Reading Comprehension

Critical Thinking

Top Knowledge

Clerical

Economics and Accounting

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|-------|----------------|-------------|
| 73 | 69 | -5.48 | 0 | 21 | 21 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Court, Municipal, and License Clerks

43-4031 | Law, Public Safety, Corrections & Security | Conventional | Below Average Growth

SOME SKILL

Alternate Job Title(s): Circuit Court Clerk; Warrant Clerk

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare dockets or calendars of cases to be called, using typewriters or computers.

Record case dispositions, court orders, or arrangements made for payment of court fees.

Answer inquiries from the general public regarding judicial procedures, court appearances, trial dates, adjournments, outstanding warrants, summonses, subpoenas, witness fees, or payment of fines.

Prepare and issue orders of the court, such as probation orders, release documentation, sentencing information, or summonses.

Prepare documents recording the outcomes of court proceedings.

Top Work Activities

Interacting with Computers

Documenting and Recording Information

Getting Information

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Clerical

Law and Government

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 201 | 217 | 7.96 | 16 | 57 | 73 | \$23,054 | \$30,262 | \$33,866 |

Credit Authorizers, Checkers, and Clerks

43-4041 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Credit Interviewer; Credit Rating Inspector; Loan Adjuster

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Keep records of customers' charges and payments.

Top Work Activities

Interacting with Computers

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

English Language

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 248 | 244 | -1.61 | 0 | 70 | 70 | \$21,637 | \$32,867 | \$38,483 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Customer Service Representatives

43-4051 | Business Management, Administration & Finance | Enterprising | Exceptional Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Complaint Adjuster; Passenger Relations Representative; Telephone Service Adviser

Occupational Description

Interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints. Exclude individuals whose duties are primarily sales or repair.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Confer with customers by telephone or in person to provide information about products and services, to take or enter orders, cancel accounts, or to obtain details of complaints.

Keep records of customer interactions and transactions, recording details of inquiries, complaints, and comments, as well as actions taken.

Check to ensure that appropriate changes were made to resolve customers' problems.

Determine charges for services requested, collect deposits or payments, or arrange for billing.

Refer unresolved customer grievances to designated departments for further investigation.

Top Work Activities

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Clerical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 5,744 | 6,967 | 21.29 | 1,223 | 1,808 | 3,031 | \$20,650 | \$27,992 | \$31,663 |

Eligibility Interviewers, Government Programs

43-4061 | Healthcare & Human Services | Social | Below Average Growth | **MEDIUM SKILL**

Alternate Job Title(s): Unemployment Benefits Claims Taker; County Service Officer; Welfare Interviewer

Occupational Description

Determine eligibility of persons applying to receive assistance from government programs and agency resources, such as welfare, unemployment benefits, social security, and public housing.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Answer applicants' questions about benefits and claim procedures.

Interview benefits recipients at specified intervals to certify their eligibility for continuing benefits.

Interpret and explain information such as eligibility requirements, application details, payment methods, and applicants' legal rights.

Initiate procedures to grant, modify, deny, or terminate assistance, or refer applicants to other agencies for assistance.

Compile, record, and evaluate personal and financial data in order to verify completeness and accuracy, and to determine eligibility status.

Top Work Activities

Performing for or Working Directly with the Public

Interacting with Computers

Organizing, Planning, and Prioritizing Work

Top Skills

Speaking

Active Listening

Reading Comprehension

Top Knowledge

Customer and Personal Service

Clerical

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 374 | 408 | 9.09 | 34 | 87 | 121 | \$25,715 | \$33,833 | \$37,892 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

File Clerks

43-4071 | Business Management, Administration & Finance | Conventional | Declining Growth

LOW SKILL

Alternate Job Title(s): Computer Tape Librarian; Document Clerk; Records Custodian

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Keep records of materials filed or removed, using logbooks or computers.
- Add new material to file records, and create new records as necessary.
- Perform general office duties such as typing, operating office machines, and sorting mail.
- Track materials removed from files in order to ensure that borrowed files are returned.
- Gather materials to be filed from departments and employees.

Top Work Activities

- Documenting and Recording Information
- Performing Administrative Activities
- Organizing, Planning, and Prioritizing Work

Top Skills

- Reading Comprehension
- Active Listening
- Speaking

Top Knowledge

- Clerical
- English Language
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 670 | 531 | -20.75 | 0 | 163 | 163 | \$18,378 | \$22,950 | \$25,235 |

Hotel, Motel, and Resort Desk Clerks

43-4081 | Marketing, Sales, Service & Tourism | Conventional | Very High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Register Clerk; Room Clerk

Occupational Description

Accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys, transmitting and receiving messages, keeping records of occupied rooms and guests' accounts, making and confirming reservations, and presenting statements to and collecting payments from departing guests.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Greet, register, and assign rooms to guests of hotels or motels.
- Verify customers' credit, and establish how the customer will pay for the accommodation.
- Contact housekeeping or maintenance staff when guests report problems.
- Issue room keys and escort instructions to bellhops.
- Make and confirm reservations.

Top Work Activities

- Performing for or Working Directly with the Public
- Interacting with Computers
- Making Decisions and Solving Problems

Top Skills

- Social Perceptiveness
- Speaking
- Service Orientation

Top Knowledge

- Customer and Personal Service
- Clerical
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,066 | 1,241 | 16.42 | 175 | 361 | 536 | \$15,380 | \$18,206 | \$19,619 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Library Assistants, Clerical

43-4121 | Education & Training

Conventional | High Growth

SOME SKILL

Alternate Job Title(s): Braille and Talking Books Clerk; Circulation Clerk; Microfilm Clerk

Occupational Description

Compile records, sort and shelve books, and issue and receive library materials such as pictures, cards, slides and microfilm. Locate library materials for loan and replace material in shelving area, stacks, or files according to identification number and title. Register patrons to permit them to borrow books, periodicals, and other library materials.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Instruct patrons on how to use reference sources, card catalogs, and automated information systems.

Open and close library during specified hours and secure library equipment, such as computers and audiovisual (AV) equipment.

Locate library materials for patrons, including books, periodicals, tape cassettes, Braille volumes, and pictures.

Answer routine inquiries, and refer patrons in need of professional assistance to librarians.

Maintain records of items received, stored, issued, and returned, and file catalog cards according to system used.

Top Work Activities

Getting Information

Top Skills

Service Orientation

Top Knowledge

Customer and Personal Service

Interacting with Computers

Reading Comprehension

Clerical

Identifying Objects, Actions, and Events

Active Listening

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 129 | 145 | 12.40 | 16 | 54 | 70 | \$15,626 | \$21,005 | \$23,695 |

Loan Interviewers and Clerks

43-4131 | Business Management, Administration & Finance

Conventional | High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Loan Closer; Loan Processor; Mortgage Clerk

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Verify and examine information and accuracy of loan application and closing documents.

Interview loan applicants in order to obtain personal and financial data, and to assist in completing applications.

Assemble and compile documents for loan closings, such as title abstracts, insurance forms, loan forms, and tax receipts.

Answer questions and advise customers regarding loans and transactions.

Contact customers by mail, telephone, or in person concerning acceptance or rejection of applications.

Top Work Activities

Processing Information

Top Skills

Active Listening

Top Knowledge

Customer and Personal Service

Interacting with Computers

Speaking

English Language

Communicating with Persons Outside Organization

Reading Comprehension

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 586 | 661 | 12.80 | 75 | 144 | 219 | \$25,253 | \$32,232 | \$35,722 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

New Accounts Clerks

43-4141 | Business Management, Administration & Finance | Conventional | Avg to Above Avg Growth |

SOME SKILL

Alternate Job Title(s): Banking Services Clerk

Occupational Description

Interview persons desiring to open bank accounts. Explain banking services available to prospective customers and assist them in preparing application form.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Answer customers' questions, and explain available services such as deposit accounts, bonds, and securities.

Compile information about new accounts, enter account information into computers, and file related forms or other documents.

Refer customers to appropriate bank personnel to meet their financial needs.

Interview customers to obtain information needed for opening accounts or renting safe-deposit boxes.

Inform customers of procedures for applying for services such as ATM cards, direct deposit of checks, and certificates of deposit.

Top Work Activities

Performing for or Working Directly with the Public

Communicating with Supervisors, Peers, or Subordinates

Communicating with Persons Outside Organization

Top Skills

Speaking

Active Listening

Social Perceptiveness

Top Knowledge

Customer and Personal Service

Mathematics

Economics and Accounting

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 96 | 106 | 10.42 | 10 | 27 | 37 | \$22,152 | \$30,096 | \$34,069 |

Order Clerks

43-4151 | Business Management, Administration & Finance | Conventional | Declining Growth |

SOME SKILL

Alternate Job Title(s): Catalogue Clerk; Subscription Clerk; Classified Advertisement Clerk

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Obtain customers' names, addresses, and billing information, product numbers, and specifications of items to be purchased, and enter this information on order forms.

Prepare invoices, shipping documents, and contracts.

Inform customers by mail or telephone of order information, such as unit prices, shipping dates, and any anticipated delays.

Receive and respond to customer complaints.

Verify customer and order information for correctness, checking it against previously obtained information as necessary.

Top Work Activities

Interacting with Computers

Getting Information

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Speaking

Reading Comprehension

Top Knowledge

Customer and Personal Service

Sales and Marketing

Clerical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 438 | 319 | -27.17 | 0 | 124 | 124 | \$20,134 | \$30,156 | \$35,167 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Human Resources Assistants, Except Payroll and Timekeeping

43-4161 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Personnel Clerk

Occupational Description

Compile and keep personnel records. Record data for each employee, such as address, weekly earnings, absences, amount of sales or production, supervisory reports on ability, and date of and reason for termination. Compile and type reports from employment records. File employment records. Search employee files and furnish information to authorized persons.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Process, verify, and maintain personnel related documentation, including staffing, recruitment, training, grievances, performance evaluations, classifications, and employee leaves of absence.

Explain company personnel policies, benefits, and procedures to employees or job applicants.

Record data for each employee, including such information as addresses, weekly earnings, absences, amount of sales or production, supervisory reports on performance, and dates of and reasons for terminations.

Gather personnel records from other departments or employees.

Examine employee files to answer inquiries and provide information for personnel actions.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Personnel and Human Resources

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 331 | 313 | -5.44 | 0 | 94 | 94 | \$25,767 | \$34,118 | \$38,293 |

Receptionists and Information Clerks

43-4171 | Business Management, Administration & Finance | Conventional | Avg to Above Avg Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Appointment Clerk; Front Desk Clerk; Referral and Information Aide

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate telephone switchboard to answer, screen and forward calls, providing information, taking messages and scheduling appointments.

Greet persons entering establishment, determine nature and purpose of visit, and direct or escort them to specific destinations.

Transmit information or documents to customers, using computer, mail, or facsimile machine.

Hear and resolve complaints from customers and public.

Perform administrative support tasks such as proofreading, transcribing handwritten information, and operating calculators or computers to work with pay records, invoices, balance sheets and other documents.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Establishing and Maintaining Interpersonal Relationships

Getting Information

Top Skills

Speaking

Active Listening

Service Orientation

Top Knowledge

Customer and Personal Service

Clerical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,811 | 3,081 | 9.61 | 270 | 758 | 1,028 | \$17,597 | \$23,090 | \$25,836 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Reservation and Transportation Ticket Agents and Travel Clerks

43-4181 | Marketing, Sales, Service & Tourism

Conventional

Declining Growth

SOME SKILL

Alternate Job Title(s): Ticket Clerk; Hotel Reservationist; Gate Agent

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan routes, itineraries, and accommodation details, and compute fares and fees, using schedules, rate books, and computers.

Make and confirm reservations for transportation and accommodations, using telephones, faxes, mail, and computers.

Prepare customer invoices and accept payment.

Answer inquiries regarding information such as schedules, accommodations, procedures, and policies.

Assemble and issue required documentation, such as tickets, travel insurance policies, and itineraries.

Top Work Activities

Interacting with Computers

Performing for or Working Directly with the Public

Resolving Conflicts and Negotiating with Others

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

English Language

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 495 | 457 | -7.68 | 0 | 111 | 111 | \$18,404 | \$22,700 | \$24,848 |

Cargo and Freight Agents

43-5011 | Transportation, Distribution & Logistics

Conventional

Exceptional Growth

SOME SKILL

Alternate Job Title(s): Routing Agent; Shipping Agent

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Negotiate and arrange transport of goods with shipping or freight companies.

Notify consignees, passengers, or customers of the arrival of freight or baggage, and arrange for delivery.

Advise clients on transportation and payment methods.

Top Work Activities

Making Decisions and Solving Problems

Getting Information

Interacting with Computers

Top Skills

Speaking

Active Listening

Critical Thinking

Top Knowledge

Transportation

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 252 | 328 | 30.16 | 76 | 58 | 134 | \$22,272 | \$36,972 | \$44,323 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Couriers and Messengers

43-5021 | Business Management, Administration & Finance | Realistic | Declining Growth

SOME SKILL

Alternate Job Title(s): Message Delivery Clerk; Telegraph Messenger

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Walk, ride bicycles, drive vehicles, or use public conveyances in order to reach destinations to deliver messages or materials.

Load vehicles with listed goods, ensuring goods are loaded correctly and taking precautions with hazardous goods.

Unload and sort items collected along delivery routes.

Receive messages or materials to be delivered, and information on recipients, such as names, addresses, telephone numbers, and delivery instructions, communicated via telephone, two-way radio, or in person.

Plan and follow the most efficient routes for delivering goods.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Performing General Physical Activities

Handling and Moving Objects

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Transportation

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 286 | 272 | -4.90 | 0 | 66 | 66 | \$17,359 | \$20,950 | \$22,745 |

Police, Fire, and Ambulance Dispatchers

43-5031 | Law, Public Safety, Corrections & Security | Conventional | High Growth

SOME SKILL

Alternate Job Title(s): 911 Operator; Emergency Operator; Public Safety Dispatcher

Occupational Description

Receive complaints from public concerning crimes and police emergencies. Broadcast orders to police patrol units in vicinity of complaint to investigate. Operate radio, telephone, or computer equipment to receive reports of fires and medical emergencies and relay information or orders to proper officials.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Question callers to determine their locations, and the nature of their problems to determine type of response needed.

Receive incoming telephone or alarm system calls regarding emergency and non-emergency police and fire service, emergency ambulance service, information and after hours calls for departments within a city.

Determine response requirements and relative priorities of situations, and dispatch units in accordance with established procedures.

Record details of calls, dispatches, and messages.

Enter, update, and retrieve information from teletype networks and computerized data systems regarding such things as wanted persons, stolen property, vehicle registration, and stolen vehicles.

Top Work Activities

Getting Information

Interacting with Computers

Documenting and Recording Information

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Customer and Personal Service

Telecommunications

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 229 | 258 | 12.66 | 29 | 47 | 76 | \$25,942 | \$32,851 | \$36,306 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Dispatchers, Except Police, Fire, and Ambulance

43-5032 | Transportation, Distribution & Logistics | Conventional | Below Average Growth

SOME SKILL

Alternate Job Title(s): Security Dispatcher; Repair Service Dispatcher; Taxicab Dispatcher

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Schedule and dispatch workers, work crews, equipment, or service vehicles to appropriate locations according to customer requests, specifications, or needs, using radios or telephones.

Confer with customers or supervising personnel to address questions, problems, and requests for service or equipment.

Monitor personnel or equipment locations and utilization to coordinate service and schedules.

Receive or prepare work orders.

Relay work orders, messages, and information to or from work crews, supervisors, and field inspectors using telephones or two-way radios.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Interacting with Computers

Top Skills

Active Listening

Speaking

Coordination

Top Knowledge

Customer and Personal Service

Transportation

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 439 | 439 | 0.00 | 0 | 90 | 90 | \$26,831 | \$37,936 | \$43,488 |

Meter Readers, Utilities

43-5041 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Electric Meter Reader; Meter Record Clerk; Water Meter Reader

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read electric, gas, water, or steam consumption meters and enter data in route books or hand-held computers.

Walk or drive vehicles along established routes to take readings of meter dials.

Upload into office computers all information collected on hand-held computers during meter rounds, or return route books or hand-hand computers to business offices so that data can be compiled.

Verify readings in cases where consumption appears to be abnormal, and record possible reasons for fluctuations.

Inspect meters for unauthorized connections, defects, and damage such as broken seals.

Top Work Activities

Getting Information

Documenting and Recording Information

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Operation Monitoring

Judgment and Decision Making

Active Listening

Top Knowledge

Customer and Personal Service

Public Safety and Security

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 71 | 63 | -11.27 | 0 | 20 | 20 | \$22,161 | \$33,284 | \$38,845 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Production, Planning, and Expediting Clerks

43-5061 | Transportation, Distribution & Logistics | Conventional | Below Average Growth

SOME SKILL

Alternate Job Title(s): Assignment Agent; Production Dispatcher; Expediter

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine documents, materials, and products, and monitor work processes, in order to assess completeness, accuracy, and conformance to standards and specifications.

Review documents such as production schedules, work orders, and staffing tables to determine personnel and materials requirements, and material priorities.

Confer with department supervisors and other personnel to assess progress and discuss needed changes.

Revise production schedules when required due to design changes, labor or material shortages, backlogs, or other interruptions, collaborating with management, marketing, sales, production, and engineering.

Confer with establishment personnel, vendors, and customers to coordinate production and shipping activities, and to resolve complaints or eliminate delays.

Top Work Activities

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Production and Processing

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 372 | 384 | 3.23 | 12 | 92 | \$26,658 | \$39,233 | \$45,520 |

Shipping, Receiving, and Traffic Clerks

43-5071 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Receiver; Garment Sorter; Freight Separator

Occupational Description

Verify and keep records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products. Exclude "Stock Clerks and Order Fillers" (43-5081) and "Weighers, Measurers, Checkers, and Samplers, Recordkeeping" (43-5111).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine contents and compare with records, such as manifests, invoices, or orders, to verify accuracy of incoming or outgoing shipment.

Prepare documents, such as work orders, bills of lading, and shipping orders to route materials.

Record shipment data, such as weight, charges, space availability, and damages and discrepancies, for reporting, accounting, and recordkeeping purposes.

Determine shipping method for materials, using knowledge of shipping procedures, routes, and rates.

Deliver or route materials to departments, using work devices, such as handtruck, conveyor, or sorting bins.

Top Work Activities

Getting Information

Handling and Moving Objects

Performing General Physical Activities

Top Skills

Reading Comprehension

Active Listening

Monitoring

Top Knowledge

Production and Processing

Customer and Personal Service

Transportation

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 1,471 | 1,431 | -2.72 | 0 | 365 | \$21,008 | \$30,153 | \$34,725 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Stock Clerks and Order Fillers

43-5081 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Inventory Control Clerk; Tool-Crib Attendant; Warehouse Clerk

Occupational Description

Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays. Exclude "Laborers and Freight, Stock, and Material Movers, Hand" (53-7062), and "Shipping, Receiving, and Traffic Clerks" (43-5071).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Receive and count stock items, and record data manually or using computer.

Pack and unpack items to be stocked on shelves in stockrooms, warehouses, or storage yards.

Verify inventory computations by comparing them to physical counts of stock, and investigate discrepancies or adjust errors.

Store items in an orderly and accessible manner in warehouses, tool rooms, supply rooms, or other areas.

Mark stock items using identification tags, stamps, electric marking tools, or other labeling equipment.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Getting Information

Top Skills

Active Listening

Speaking

Judgment and Decision Making

Top Knowledge

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 4,022 | 4,268 | 6.12 | 246 | 926 | 1,172 | \$16,546 | \$22,711 | \$25,794 |

Weighers, Measurers, Checkers, and Samplers, Recordkeeping

43-5111 | Science, Engineering & Mathematics

Conventional

Declining Growth

SOME SKILL

Alternate Job Title(s): Counter; Inventory Checker; Scale Attendant

Occupational Description

Weigh, measure, and check materials, supplies, and equipment for the purpose of keeping relevant records. Duties are primarily clerical by nature. Include workers who collect and keep record of samples of products or materials. Exclude production "Inspectors, Testers, Sorters, Samplers, and Weighers" (51-9061).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect or prepare measurement, weight, or identification labels; and attach them to products.

Document quantity, quality, type, weight, test result data, and value of materials or products, in order to maintain shipping, receiving, and production records and files.

Compare product labels, tags, or tickets, shipping manifests, purchase orders, and bills of lading to verify accuracy of shipment contents, quality specifications, and/or weights.

Count or estimate quantities of materials, parts, or products received or shipped.

Weigh or measure materials, equipment, or products to maintain relevant records, using volume meters, scales, rules, and/or calipers.

Top Work Activities

Interacting with Computers

Getting Information

Documenting and Recording Information

Top Skills

Critical Thinking

Reading Comprehension

Speaking

Top Knowledge

Clerical

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 182 | 167 | -8.24 | 0 | 64 | 64 | \$20,456 | \$30,030 | \$34,817 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Executive Secretaries and Administrative Assistants

43-6011 | Business Management, Administration & Finance | Conventional | High Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Administrative Aide

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare invoices, reports, memos, letters, financial statements and other documents, using word processing, spreadsheet, database, or presentation software.

Answer phone calls and direct calls to appropriate parties or take messages.

Conduct research, compile data, and prepare papers for consideration and presentation by executives, committees and boards of directors.

Attend meetings to record minutes.

Greet visitors and determine whether they should be given access to specific individuals.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Performing Administrative Activities

Interacting with Computers

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 4,027 | 4,540 | 12.74 | 513 | 543 | 1,056 | \$26,488 | \$36,699 | \$41,804 |

Legal Secretaries

43-6012 | Business Management, Administration & Finance | Conventional | Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): N/A

Occupational Description

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

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Prepare and process legal documents and papers, such as summonses, subpoenas, complaints, appeals, motions, and pretrial agreements.

Mail, fax, or arrange for delivery of legal correspondence to clients, witnesses, and court officials.

Receive and place telephone calls.

Schedule and make appointments.

Organize and maintain law libraries, documents, and case files.

Top Work Activities

Interacting with Computers

Organizing, Planning, and Prioritizing Work

Performing Administrative Activities

Top Skills

Writing

Reading Comprehension

Active Listening

Top Knowledge

Clerical

English Language

Law and Government

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 614 | 627 | 2.12 | 13 | 83 | 96 | \$22,787 | \$30,113 | \$33,776 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Medical Secretaries

43-6013 | Business Management, Administration & Finance | Conventional | Exceptional Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Psychiatric Secretary; Dental Secretary

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Answer telephones, and direct calls to appropriate staff.

Schedule and confirm patient diagnostic appointments, surgeries and medical consultations.

Greet visitors, ascertain purpose of visit, and direct them to appropriate staff.

Operate office equipment such as voice mail messaging systems, and use word processing, spreadsheet, and other software applications to prepare reports, invoices, financial statements, letters, case histories and medical records.

Complete insurance and other claim forms.

Top Work Activities

Getting Information

Performing for or Working Directly with the Public

Assisting and Caring for Others

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Clerical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 814 | 966 | 18.67 | 152 | 110 | 262 | \$22,196 | \$29,243 | \$32,767 |

Secretaries, Except Legal, Medical, and Executive

43-6014 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Personal Secretary; Office Secretary; Receptionist Secretary

Occupational Description

Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers. Exclude legal, medical, or executive secretaries and administrative assistants (43-6011 through 43-6013).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate office equipment such as fax machines, copiers, and phone systems, and use computers for spreadsheet, word processing, database management, and other applications.

Answer telephones and give information to callers, take messages, or transfer calls to appropriate individuals.

Greet visitors and callers, handle their inquiries, and direct them to the appropriate persons according to their needs.

Set up and maintain paper and electronic filing systems for records, correspondence, and other material.

Locate and attach appropriate files to incoming correspondence requiring replies.

Top Work Activities

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Performing Administrative Activities

Top Skills

Speaking

Active Listening

Time Management

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 4,054 | 4,028 | -0.64 | 0 | 546 | 546 | \$22,993 | \$29,825 | \$33,241 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Computer Operators

43-9011 | Information Technology

Conventional | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Console Operator; Data Processing Clerk; Peripheral Equipment Operator

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Enter commands, using computer terminal, and activate controls on computer and peripheral equipment to integrate and operate equipment.
- Monitor the system for equipment failure or errors in performance.
- Respond to program error messages by finding and correcting problems or terminating the program.
- Notify supervisor or computer maintenance technicians of equipment malfunctions.
- Answer telephone calls to assist computer users encountering problems.

Top Work Activities

Interacting with Computers

Getting Information

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Operation Monitoring

Reading Comprehension

Monitoring

Top Knowledge

Computers and Electronics

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 341 | 269 | -21.11 | 0 | 39 | 39 | \$19,976 | \$30,327 | \$35,502 |

Data Entry Keyers

43-9021 | Business Management, Administration & Finance

Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Keypunch Operator; Data Typist

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Read source documents such as canceled checks, sales reports, or bills, and enter data in specific data fields or onto tapes or disks for subsequent entry, using keyboards or scanners.
- Compile, sort and verify the accuracy of data before it is entered.
- Compare data with source documents, or re-enter data in verification format to detect errors.
- Store completed documents in appropriate locations.
- Locate and correct data entry errors, or report them to supervisors.

Top Work Activities

Interacting with Computers

Getting Information

Documenting and Recording Information

Top Skills

Reading Comprehension

Monitoring

Active Listening

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 945 | 915 | -3.17 | 0 | 197 | 197 | \$19,639 | \$24,019 | \$26,210 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Word Processors and Typists

43-9022 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Clerk Typist; Dictaphone Typist

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Check completed work for spelling, grammar, punctuation, and format.

Perform other clerical duties such as answering telephone, sorting and distributing mail, running errands or sending faxes.

Gather, register, and arrange the material to be typed, following instructions.

Type correspondence, reports, text and other written material from rough drafts, corrected copies, voice recordings, dictation or previous versions, using a computer, word processor, or typewriter.

File and store completed documents on computer hard drive or disk, and/or maintain a computer filing system to store, retrieve, update and delete documents.

Top Work Activities

Getting Information

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 236 | 210 | -11.02 | 0 | 18 | 18 | \$25,822 | \$31,884 | \$34,916 |

Desktop Publishers

43-9031 | Arts, AV Technology & Communications | Artistic | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Computer Composer; Electronic Pagination System Operator; Page Makeup System Operator

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Check preliminary and final proofs for errors and make necessary corrections.

Operate desktop publishing software and equipment to design, lay out, and produce camera-ready copy.

Position text and art elements from a variety of databases in a visually appealing way to design print or web pages, using knowledge of type styles and size and layout patterns.

Convert various types of files for printing or for the Internet, using computer software.

Transmit, deliver or mail publication master to printer for production into film and plates.

Top Work Activities

Interacting with Computers

Getting Information

Thinking Creatively

Top Skills

Critical Thinking

Reading Comprehension

Active Listening

Top Knowledge

Computers and Electronics

Design

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 125 | 100 | -20.00 | 0 | 21 | 21 | \$16,139 | \$23,781 | \$27,603 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Insurance Claims and Policy Processing Clerks

43-9041 | Business Management, Administration & Finance | Conventional | Very High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Claim Taker; Policy Issue Clerk; Underwriting Clerk

Occupational Description

Process new insurance policies, modifications to existing policies, and claims forms. Obtain information from policyholders to verify the accuracy and completeness of information on claims forms, applications and related documents, and company records. Update existing policies and company records to reflect changes requested by policyholders and insurance company representatives. Exclude "Claims Adjusters, Examiners, and Investigators" (13-1031).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Review insurance policy to determine coverage.
- Prepare insurance claim forms or related documents and review them for completeness.
- Provide customer service, such as limited instructions on proceeding with claims or referrals to auto repair facilities or local contractors.
- Organize or work with detailed office or warehouse records, using computers to enter, access, search or retrieve data.
- Post or attach information to claim file.

Top Work Activities

- Getting Information
- Processing Information
- Evaluating Information to Determine Compliance with Standards

Top Skills

- Active Listening
- Reading Comprehension
- Speaking

Top Knowledge

- Customer and Personal Service
- Clerical
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 810 | 932 | 15.06 | 122 | 106 | 228 | \$23,098 | \$30,281 | \$33,873 |

Mail Clerks and Mail Machine Operators, Except Postal Service

43-9051 | Business Management, Administration & Finance | Conventional | Declining Growth

SOME SKILL

Alternate Job Title(s): Addressing Machine Operator; Mail Distributor; Mail Opener

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Seal or open envelopes, by hand or by using machines.
- Affix postage to packages or letters by hand, or stamp materials, using postage meters.
- Verify that items are addressed correctly, marked with the proper postage, and in suitable condition for processing.
- Place incoming or outgoing letters or packages into sacks or bins based on destination or type, and place identifying tags on sacks or bins.
- Clear jams in sortation equipment.

Top Work Activities

- Getting Information
- Handling and Moving Objects
- Monitor Processes, Materials, or Surroundings

Top Skills

- Reading Comprehension
- Critical Thinking
- Monitoring

Top Knowledge

- Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 119 | 108 | -9.24 | 0 | 22 | 22 | \$17,577 | \$25,872 | \$30,020 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Office Clerks, General

43-9061 | Business Management, Administration & Finance | Conventional | High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Administrative Clerk; Office Assistant; Real Estate Clerk

Occupational Description

Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring limited knowledge of office management systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate office machines, such as photocopiers and scanners, facsimile machines, voice mail systems, and personal computers.

Answer telephones, direct calls, and take messages.

Maintain and update filing, inventory, mailing, and database systems, either manually or using a computer.

Communicate with customers, employees, and other individuals to answer questions, disseminate or explain information, take orders, and address complaints.

Open, sort, and route incoming mail, answer correspondence, and prepare outgoing mail.

Top Work Activities

Interacting with Computers

Communicating with Supervisors, Peers, or Subordinates

Documenting and Recording Information

Top Skills

Reading Comprehension

Active Listening

Speaking

Top Knowledge

Clerical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 9,468 | 10,627 | 12.24 | 1,159 | 1,290 | 2,449 | \$16,384 | \$23,172 | \$26,566 |

First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers

45-1011 | Natural Resources & Mining

Realistic

Exceptional Growth

SOME SKILL

Alternate Job Title(s): Christmas Tree Farm Manager; Harvest Crew Supervisor; Fish Hatchery Supervisor

Occupational Description

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

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect crops, fields, and plant stock to determine conditions and need for cultivating, spraying, weeding, or harvesting.

Assign duties such as cultivation, irrigation and harvesting of crops or plants, product packaging and grading, and equipment maintenance.

Observe workers to detect inefficient and unsafe work procedures or to identify problems, initiating corrective action as necessary.

Review employees' work to evaluate quality and quantity.

Prepare and maintain time and payroll reports, as well as details of personnel actions such as performance evaluations, hires, promotions, and disciplinary actions.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Critical Thinking

Judgment and Decision Making

Top Knowledge

Food Production

English Language

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 180 | 216 | 20.00 | 36 | 46 | 82 | \$33,126 | \$44,075 | \$49,549 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Agricultural Inspectors

45-2011 | Natural Resources & Mining

Realistic

Very High Growth

MEDIUM SKILL

Alternate Job Title(s): Cattle Examiner; Meat Grader; Grain Sampler

Occupational Description

Inspect agricultural commodities, processing equipment, and facilities, and fish and logging operations, to ensure compliance with regulations and laws governing health, quality, and safety.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect agricultural commodities and related operations, as well as fish and logging operations for compliance with laws and regulations governing health, quality, and safety.

Inspect and test horticultural products or livestock to detect harmful diseases, chemical residues, and infestations, and to determine the quality of products or animals.

Verify that transportation and handling procedures meet regulatory requirements.

Collect samples from animals, plants, or products, and route them to laboratories for microbiological assessment, ingredient verification, and other testing.

Interpret and enforce government acts and regulations and explain required standards to agricultural workers.

Top Work Activities

Getting Information

Top Skills

Quality Control Analysis

Top Knowledge

Law and Government

Evaluating Information to Determine Compliance with Standards

Active Listening

English Language

Documenting and Recording Information

Critical Thinking

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 116 | 132 | 13.79 | 16 | 24 | 40 | \$20,752 | \$30,393 | \$35,214 |

Agricultural Equipment Operators

45-2091 | Natural Resources & Mining

Realistic

High Growth

HIGH DEMAND**SOME SKILL**

Alternate Job Title(s): Baler; Combine Operator; Tractor Driver

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adjust, repair, and service farm machinery and notify supervisors when machinery malfunctions.

Observe and listen to machinery operation to detect equipment malfunctions.

Irrigate soil, using portable pipes or ditch systems, and maintain ditches or pipes and pumps.

Mix specified materials or chemicals, and dump solutions, powders, or seeds into planter or sprayer machinery.

Operate or tend equipment used in agricultural production, such as tractors, combines, and irrigation equipment.

Top Work Activities

Controlling Machines and Processes

Top Skills

Operation Monitoring

Top Knowledge

Food Production

Inspecting Equipment, Structures, or Material

Operation and Control

Personnel and Human Resources

Operating Vehicles, Mechanized Devices, or Equipment

Troubleshooting

Chemistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 816 | 917 | 12.38 | 101 | 220 | 321 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Farmworkers and Laborers, Crop, Nursery, and Greenhouse

45-2092 | Natural Resources & Mining | Realistic | Avg to Above Avg Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Apple Picker; Tobacco Cutter; Vegetable Loader

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Plant, spray, weed, fertilize, and water plants, shrubs, and trees, using hand tools and gardening tools.
- Harvest plants, and transplant or pot and label them.
- Feel plants' leaves and note their coloring to detect the presence of insects or disease.
- Operate tractors and other machinery and equipment to fertilize, cultivate, harvest, and spray fields and plants.
- Inspect plants and bud ties to assess quality.

Top Work Activities

- Handling and Moving Objects
- Getting Information
- Performing General Physical Activities

Top Skills

- Social Perceptiveness
- Critical Thinking
- Monitoring

Top Knowledge

- English Language
- Transportation
- Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,497 | 2,740 | 9.73 | 243 | 673 | 916 | \$16,894 | \$21,636 | \$24,007 |

Farmworkers, Farm and Ranch Animals

45-2093 | Natural Resources & Mining | Realistic | Below Average Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Horse Groomer; Livestock Feeder

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Feed and water livestock; and monitor food and water supplies.
- Drive trucks, tractors, and other equipment to distribute feed to animals.
- Examine animals to detect illness, injury, or disease, and to check physical characteristics, such as rate of weight gain.
- Provide medical treatment, such as administering medications and vaccinations; or arrange for veterinarians to provide more extensive treatment.
- Mix feed, additives, and medicines in prescribed portions.

Top Work Activities

- Handling and Moving Objects
- Performing General Physical Activities
- Inspecting Equipment, Structures, or Material

Top Skills

- Active Listening
- Critical Thinking
- Monitoring

Top Knowledge

- Administration and Management
- Customer and Personal Service
- Biology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,283 | 1,336 | 4.13 | 53 | 346 | 399 | \$16,558 | \$21,021 | \$23,252 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Construction Trades and Extraction Workers

47-1011 | Natural Resources & Mining | Enterprising | Very High Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Cement Contractor; Quarry Boss

Occupational Description

Directly supervise and coordinate activities of construction or extraction workers.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine and inspect work progress, equipment, and construction sites to verify safety and to ensure that specifications are met.

Read specifications, such as blueprints, to determine construction requirements or to plan procedures.

Estimate material or worker requirements to complete jobs.

Supervise, coordinate, or schedule the activities of construction or extractive workers.

Confer with managerial or technical personnel, other departments, or contractors to resolve problems or to coordinate activities.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Organizing, Planning, and Prioritizing Work

Top Skills

Active Listening

Coordination

Speaking

Top Knowledge

Building and Construction

Administration and Management

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,003 | 2,342 | 16.92 | 339 | 387 | 726 | \$39,936 | \$64,113 | \$76,201 |

Brickmasons and Blockmasons

47-2021 | Architecture & Construction | Realistic | High Growth | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Adobe Layer; Chimney Builder; Furnace Liner

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Remove excess mortar with trowels and hand tools, and finish mortar joints with jointing tools, for a sealed, uniform appearance.

Construct corners by fastening in plumb position a corner pole or building a corner pyramid of bricks, and filling in between the corners using a line from corner to corner to guide each course, or layer, of brick.

Measure distance from reference points and mark guidelines to lay out work, using plumb bobs and levels.

Break or cut bricks, tiles, or blocks to size, using trowel edge, hammer, or power saw.

Interpret blueprints and drawings to determine specifications and to calculate the materials required.

Top Work Activities

Performing General Physical Activities

Handling and Moving Objects

Inspecting Equipment, Structures, or Material

Top Skills

Critical Thinking

Monitoring

Coordination

Top Knowledge

Building and Construction

Mathematics

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 313 | 351 | 12.14 | 38 | 79 | 117 | \$35,626 | \$48,880 | \$55,508 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Carpenters

47-2031 | Architecture & Construction

Realistic

High Growth

HIGH DEMAND

MEDIUM SKILL

Alternate Job Title(s): Shipwright; Cabinetmaker; Wood Floor Layer

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Study specifications in blueprints, sketches or building plans to prepare project layout and determine dimensions and materials required.

Shape or cut materials to specified measurements, using hand tools, machines, or power saw.

Follow established safety rules and regulations and maintain a safe and clean environment.

Measure and mark cutting lines on materials, using ruler, pencil, chalk, and marking gauge.

Install structures and fixtures, such as windows, frames, floorings, and trim, or hardware, using carpenter's hand and power tools.

Top Work Activities

Inspecting Equipment, Structures, or Material

Top Skills

Critical Thinking

Top Knowledge

Building and Construction

Performing General Physical Activities

Equipment Selection

Mathematics

Getting Information

Operation Monitoring

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 3,406 | 3,827 | 12.36 | 421 | 424 | 845 | \$24,320 | \$32,845 | \$37,107 |

Carpet Installers

47-2041 | Architecture & Construction

Realistic

Declining Growth

LOW SKILL

Alternate Job Title(s): Floor Coverer; Rug Layer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Join edges of carpet and seam edges where necessary, by sewing or by using tape with glue and heated carpet iron.

Cut and trim carpet to fit along wall edges, openings, and projections, finishing the edges with a wall trimmer.

Inspect the surface to be covered to determine its condition, and correct any imperfections that might show through carpet or cause carpet to wear unevenly.

Roll out, measure, mark, and cut carpeting to size with a carpet knife, following floor sketches and allowing extra carpet for final fitting.

Plan the layout of the carpet, allowing for expected traffic patterns and placing seams for best appearance and longest wear.

Top Work Activities

Performing General Physical Activities

Top Skills

Active Listening

Top Knowledge

Customer and Personal Service

Training and Teaching Others

Critical Thinking

Mathematics

Communicating with Supervisors, Peers, or Subordinates

Mathematics

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 173 | 170 | -1.73 | 0 | 45 | 45 | \$18,618 | \$25,649 | \$29,165 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Floor Layers, Except Carpet, Wood, and Hard Tiles

47-2042 | Architecture & Construction | Realistic | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Composition Floor Setter; Linoleum Layer; Soft Tile Setter

Occupational Description

Apply blocks, strips, or sheets of shock-absorbing, sound-deadening, or decorative coverings to floors.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sweep, scrape, sand, or chip dirt and irregularities to clean base surfaces, correcting imperfections that may show through the covering.

Cut flooring material to fit around obstructions.

Inspect surface to be covered to ensure that it is firm and dry.

Trim excess covering materials, tack edges, and join sections of covering material to form tight joint.

Form a smooth foundation by stapling plywood or Masonite over the floor or by brushing waterproof compound onto surface and filling cracks with plaster, putty, or grout to seal pores.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Making Decisions and Solving Problems

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Building and Construction

Customer and Personal Service

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 57 | 58 | 1.75 | 1 | 15 | 16 | \$24,426 | \$36,821 | \$43,018 |

Tile and Marble Setters

47-2044 | Architecture & Construction | Realistic | Avg to Above Avg Growth |

SOME SKILL

Alternate Job Title(s): Ceramic Tile Installer; Hard Tile Setter; Marble Installer

Occupational Description

Apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Cut and shape tile to fit around obstacles and into odd spaces and corners, using hand and power cutting tools.

Align and straighten tile using levels, squares and straightedges.

Lay and set mosaic tiles to create decorative wall, mural and floor designs.

Determine and implement the best layout to achieve a desired pattern.

Measure and mark surfaces to be tiled, following blueprints.

Top Work Activities

Handling and Moving Objects

Getting Information

Performing General Physical Activities

Top Skills

Critical Thinking

Active Listening

Speaking

Top Knowledge

Building and Construction

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 105 | 117 | 11.43 | 12 | 27 | 39 | \$33,891 | \$44,560 | \$49,894 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cement Masons and Concrete Finishers

47-2051 | Architecture & Construction | Realistic | Very High Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Curb Builder; Concrete Floor Installer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Set the forms that hold concrete to the desired pitch and depth, and align them.
- Check the forms that hold the concrete to see that they are properly constructed.
- Spread, level, and smooth concrete, using rake, shovel, hand or power trowel, hand or power screed, and float.
- Monitor how the wind, heat, or cold affect the curing of the concrete throughout the entire process.
- Direct the casting of the concrete and supervise laborers who use shovels or special tools to spread it.

| | | |
|--|-------------------|-------------------------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Making Decisions and Solving Problems | Monitoring | Building and Construction |
| Inspecting Equipment, Structures, or Material | Active Listening | Administration and Management |
| Operating Vehicles, Mechanized Devices, or Equipment | Critical Thinking | Mathematics |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
| 749 | 867 | 15.75 | 118 | 188 | 306 | \$24,700 | \$32,856 | \$36,933 |

Construction Laborers

47-2061 | Architecture & Construction | Realistic | Very High Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Air Hammer Operator; Asphalt Patcher; Construction Craft Laborer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Clean or prepare construction sites to eliminate possible hazards.
- Read plans, instructions, or specifications to determine work activities.
- Control traffic passing near, in, or around work zones.
- Signal equipment operators to facilitate alignment, movement, or adjustment of machinery, equipment, or materials.
- Dig ditches or trenches, backfill excavations, or compact and level earth to grade specifications, using picks, shovels, pneumatic tampers, or rakes.

| | | |
|--|------------------|---------------------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Performing General Physical Activities | Speaking | Building and Construction |
| Handling and Moving Objects | Coordination | Design |
| Getting Information | Active Listening | Mathematics |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
| 3,049 | 3,596 | 17.94 | 547 | 204 | 751 | \$22,801 | \$28,961 | \$32,041 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Operating Engineers and Other Construction Equipment Operators

47-2073 | Architecture & Construction | Realistic | Below Average Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Bulldozer Operator; Power Grader Operator; Steam Shovel Operator

Occupational Description

Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties. Exclude "Crane and Tower Operators" (53-7021) and equipment operators who work in extraction or other non-construction industries.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Learn and follow safety regulations.
- Take actions to avoid potential hazards or obstructions, such as utility lines, other equipment, other workers, or falling objects.
- Adjust handwheels and depress pedals to control attachments, such as blades, buckets, scrapers, or swing booms.
- Start engines, move throttles, switches, or levers, or depress pedals to operate machines, such as bulldozers, trench excavators, road graders, or backhoes.
- Locate underground services, such as pipes or wires, prior to beginning work.

Top Work Activities

- Operating Vehicles, Mechanized Devices, or Equipment
- Inspecting Equipment, Structures, or Material
- Monitor Processes, Materials, or Surroundings

Top Skills

- Operation and Control
- Operation Monitoring
- Active Listening

Top Knowledge

- Building and Construction
- Mechanical
- Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 2,876 | 3,024 | 5.15 | 148 | 494 | 642 | \$30,485 | \$45,986 | \$53,737 |

Drywall and Ceiling Tile Installers

47-2081 | Architecture & Construction | Realistic | Very High Growth | **SOME SKILL**

Alternate Job Title(s): Acoustical Carpenter; Lather; Sheet Rock Hanger

Occupational Description

Apply plasterboard or other wallboard to ceilings or interior walls of buildings. Apply or mount acoustical tiles or blocks, strips, or sheets of shock-absorbing materials to ceilings and walls of buildings to reduce or reflect sound. Materials may be of decorative quality. Include lathers who fasten wooden, metal, or rockboard lath to walls, ceilings or partitions of buildings to provide support base for plaster, fire-proofing, or acoustical material. Exclude "Carpet Installers" (47-2041), "Carpenters" (47-2031), and "Tile and Marble Setters" (47-2044).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Measure and mark surfaces to lay out work, according to blueprints or drawings, using tape measures, straightedges or squares, and marking devices.
- Read blueprints or other specifications to determine methods of installation, work procedures, or material or tool requirements.
- Fit and fasten wallboard or drywall into position on wood or metal frameworks, using glue, nails, or screws.
- Hang dry lines to wall moldings to guide positioning of main runners.
- Measure and cut openings in panels or tiles for electrical outlets, windows, vents, plumbing, or other fixtures, using keyhole saws or other cutting tools.

Top Work Activities

- Handling and Moving Objects
- Getting Information
- Performing General Physical Activities

Top Skills

- Active Listening
- Speaking
- Critical Thinking

Top Knowledge

- Building and Construction
- Mathematics
- Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 335 | 383 | 14.33 | 48 | 37 | 85 | \$26,539 | \$36,174 | \$40,991 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Tapers

47-2082 | Architecture & Construction | Realistic | Very High Growth

SOME SKILL

Alternate Job Title(s): Sheet Rock Taper; Wall Taper

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Remove extra compound after surfaces have been covered sufficiently.

Spread sealing compound between boards or panels or over cracks, holes, nail heads, or screw heads, using trowels, broadknives, or spatulas.

Press paper tape over joints to embed tape into sealing compound and to seal joints.

Mix sealing compounds by hand or with portable electric mixers.

Spread and smooth cementing material over tape, using trowels or floating machines to blend joints with wall surfaces.

Top Work Activities

Organizing, Planning, and Prioritizing Work

Making Decisions and Solving Problems

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Building and Construction

Public Safety and Security

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 98 | 113 | 15.31 | 15 | 11 | 26 | \$24,863 | \$35,453 | \$40,748 |

Electricians

47-2111 | Architecture & Construction | Realistic | Very High Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Electrical Sign Servicer; House Wirer; Chief Electrician

Occupational Description

Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems. Exclude "Security and Fire Alarm Systems Installers" (49-2098).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Maintain current electrician's license or identification card to meet governmental regulations.

Connect wires to circuit breakers, transformers, or other components.

Repair or replace wiring, equipment, and fixtures, using hand tools and power tools.

Assemble, install, test, and maintain electrical or electronic wiring, equipment, appliances, apparatus, and fixtures, using hand tools and power tools.

Test electrical systems and continuity of circuits in electrical wiring, equipment, and fixtures, using testing devices such as ohmmeters, voltmeters, and oscilloscopes, to ensure compatibility and safety of system.

Top Work Activities

Getting Information

Inspecting Equipment, Structures, or Material

Making Decisions and Solving Problems

Top Skills

Troubleshooting

Repairing

Active Listening

Top Knowledge

Mechanical

Building and Construction

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,082 | 2,402 | 15.37 | 320 | 503 | 823 | \$30,746 | \$45,540 | \$52,936 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Insulation Workers, Floor, Ceiling, and Wall

47-2131 | Architecture & Construction

Realistic

Very High Growth

SOME SKILL

Alternate Job Title(s): Composition Weatherboard Installer; Fiberglass Insulation Installer; Insulation Blower

Occupational Description

Line and cover structures with insulating materials. May work with batt, roll, or blown insulation materials.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read blueprints and select appropriate insulation, based on space characteristics and the heat retaining or excluding characteristics of the material.

Measure and cut insulation for covering surfaces, using tape measures, handsaws, power saws, knives, or scissors.

Cover and line structures with blown or rolled forms of materials to insulate against cold, heat, or moisture, using saws, knives, rasps, trowels, blowers, or other tools and implements.

Fit, wrap, staple, or glue insulating materials to structures or surfaces, using hand tools or wires.

Cover, seal, or finish insulated surfaces or access holes with plastic covers, canvas strips, sealants, tape, cement or asphalt mastic.

Top Work Activities

Inspecting Equipment, Structures, or Material

Top Skills

Operation Monitoring

Top Knowledge

Building and Construction

Getting Information

Monitoring

English Language

Operating Vehicles, Mechanized Devices, or Equipment

Operation and Control

Transportation

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 74 | 87 | 17.57 | 13 | 24 | 37 | \$18,544 | \$26,948 | \$31,150 |

Painters, Construction and Maintenance

47-2141 | Architecture & Construction

Realistic

Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Bridge Painter; Traffic Line Painter; House Painter

Occupational Description

Paint walls, equipment, buildings, bridges, and other structural surfaces, using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency. Exclude "Paperhangers" (47-2142).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Cover surfaces with dropcloths or masking tape and paper to protect surfaces during painting.

Fill cracks, holes, or joints with caulk, putty, plaster, or other fillers, using caulking guns or putty knives.

Apply primers or sealers to prepare new surfaces, such as bare wood or metal, for finish coats.

Apply paint, stain, varnish, enamel, or other finishes to equipment, buildings, bridges, or other structures, using brushes, spray guns, or rollers.

Calculate amounts of required materials and estimate costs, based on surface measurements or work orders.

Top Work Activities

Getting Information

Top Skills

Active Listening

Top Knowledge

Customer and Personal Service

Performing General Physical Activities

Critical Thinking

English Language

Handling and Moving Objects

Social Perceptiveness

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 949 | 994 | 4.74 | 45 | 162 | 207 | \$20,954 | \$30,043 | \$34,588 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Plumbers, Pipefitters, and Steamfitters

47-2152 | Architecture & Construction | Realistic | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Gas Line Installer; Hot Water Heater Installer; Sprinkling System Installer

Occupational Description

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.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Measure, cut, thread, or bend pipe to required angle, using hand or power tools or machines such as pipe cutters, pipe-threading machines, or pipe-bending machines.

Study building plans and inspect structures to assess material and equipment needs, to establish the sequence of pipe installations, and to plan installation around obstructions such as electrical wiring.

Locate and mark the position of pipe installations, connections, passage holes, or fixtures in structures, using measuring instruments such as rulers or levels.

Assemble pipe sections, tubing, or fittings, using couplings, clamps, screws, bolts, cement, plastic solvent, caulking, or soldering, brazing, or welding equipment.

Fill pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks.

Top Work Activities

Getting Information

Handling and Moving Objects

Making Decisions and Solving Problems

Top Skills

Critical Thinking

Active Listening

Reading Comprehension

Top Knowledge

Building and Construction

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 1,035 | 1,227 | 18.55 | 192 | 209 | 401 | \$30,467 | \$45,644 | \$53,232 |

Roofers

47-2181 | Architecture & Construction | Realistic | Below Average Growth | **SOME SKILL**

Alternate Job Title(s): Slater; Hot Tar Roofer; Terra Cotta Roofer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect problem roofs to determine the best repair procedures.

Set up scaffolding to provide safe access to roofs.

Align roofing materials with edges of roofs.

Clean and maintain equipment.

Cement or nail flashing strips of metal or shingle over joints to make them watertight.

Top Work Activities

Performing General Physical Activities

Getting Information

Organizing, Planning, and Prioritizing Work

Top Skills

Coordination

Operation and Control

Active Listening

Top Knowledge

Building and Construction

Design

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 387 | 409 | 5.68 | 22 | 64 | 86 | \$23,323 | \$29,564 | \$32,684 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Sheet Metal Workers

47-2211 | Architecture & Construction | Realistic | High Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Duct Installer, Metal Work; Tinsmith

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Determine project requirements, including scope, assembly sequences, and required methods and materials, according to blueprints, drawings, and written or verbal instructions.

Lay out, measure, and mark dimensions and reference lines on material, such as roofing panels, according to drawings or templates, using calculators, scribes, dividers, squares, and rulers.

Fasten seams and joints together with welds, bolts, cement, rivets, solder, caulks, metal drive clips, and bonds to assemble components into products or to repair sheet metal items.

Install assemblies, such as flashing, pipes, tubes, heating and air conditioning ducts, furnace casings, rain gutters, and down spouts, in supportive frameworks.

Convert blueprints into shop drawings to be followed in the construction and assembly of sheet metal products.

Top Work Activities

Getting Information

Making Decisions and Solving Problems

Handling and Moving Objects

Top Skills

Critical Thinking

Judgment and Decision Making

Time Management

Top Knowledge

Mechanical

Building and Construction

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 456 | 510 | 11.84 | 54 | 162 | \$28,288 | \$38,999 | \$44,354 |

Structural Iron and Steel Workers

47-2221 | Architecture & Construction | Realistic | Very High Growth | **SOME SKILL**

Alternate Job Title(s): Bolter; Guard Rail Installer; Construction Ironworker

Occupational Description

Raise, place, and unite iron or steel girders, columns, and other structural members to form completed structures or structural frameworks. May erect metal storage tanks and assemble prefabricated metal buildings. Exclude "Reinforcing Iron and Rebar Workers" (47-2171).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read specifications and blueprints to determine the locations, quantities, and sizes of materials required.

Verify vertical and horizontal alignment of structural-steel members, using plumb bobs, laser equipment, transits, and/or levels.

Connect columns, beams, and girders with bolts, following blueprints and instructions from supervisors.

Hoist steel beams, girders, and columns into place, using cranes, or signal hoisting equipment operators to lift and position structural-steel members.

Bolt aligned structural-steel members in position for permanent riveting, bolting, or welding into place.

Top Work Activities

Performing General Physical Activities

Controlling Machines and Processes

Handling and Moving Objects

Top Skills

Operation Monitoring

Operation and Control

Coordination

Top Knowledge

Building and Construction

Production and Processing

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 260 | 302 | 16.15 | 42 | 85 | \$27,003 | \$37,767 | \$43,149 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters

47-3011 | Architecture & Construction

Realistic

Exceptional Growth

LOW SKILL

Alternate Job Title(s): Brick Carrier; Brick Washer; Tile Layers Helper

Occupational Description

Help brickmasons, blockmasons, stonemasons, or tile and marble setters by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist brickmasons, blockmasons, and stonemasons or tile and marble setters, and classify them under "Construction Laborers" (47-2061).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Cut materials to specified sizes for installation, using power saws or tile cutters.

Erect scaffolding or other installation structures.

Locate and supply materials to masons for installation, following drawings or numbered sequences.

Mix mortar, plaster, and grout, manually or using machines, according to standard formulas.

Apply grout between joints of bricks or tiles, using grouting trowels.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Controlling Machines and Processes

Top Skills

Monitoring

Operation Monitoring

Critical Thinking

Top Knowledge

Building and Construction

Public Safety and Security

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 136 | 161 | 18.38 | 25 | 28 | 53 | \$20,338 | \$27,380 | \$30,902 |

Helpers--Carpenters

47-3012 | Architecture & Construction

Realistic

Exceptional Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Carpenter's Mate; Joiner's Helper; Cabinetmakers Helper

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Position and hold timbers, lumber, or paneling in place for fastening or cutting.

Erect scaffolding, shoring, or braces.

Select tools, equipment, and materials from storage and transport items to work site.

Fasten timbers or lumber with glue, screws, pegs, or nails and install hardware.

Clean work areas, machines, or equipment, to maintain a clean and safe job site.

Top Work Activities

Performing General Physical Activities

Inspecting Equipment, Structures, or Material

Handling and Moving Objects

Top Skills

Active Listening

Critical Thinking

Coordination

Top Knowledge

Building and Construction

Mathematics

Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 702 | 871 | 24.07 | 169 | 146 | 315 | \$19,369 | \$24,677 | \$27,330 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Helpers--Electricians

47-3013 | Architecture & Construction | Realistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Utilities Ground Worker; Electrician's Assistant

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Trace out short circuits in wiring, using test meter.
- Measure, cut, and bend wire and conduit, using measuring instruments and hand tools.
- Maintain tools, vehicles, and equipment and keep parts and supplies in order.
- Drill holes and pull or push wiring through openings, using hand and power tools.
- Perform semi-skilled and unskilled laboring duties related to the installation, maintenance and repair of a wide variety of electrical systems and equipment.

Top Work Activities

- Getting Information
- Handling and Moving Objects
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Active Listening
- Speaking
- Coordination

Top Knowledge

- Building and Construction
- Mechanical
- Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 156 | 202 | 29.49 | 46 | 32 | 78 | \$18,076 | \$26,242 | \$30,326 |

Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters

47-3015 | Architecture & Construction | Realistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Pipe Cutter; Plumbers Assistant; Water Main Installers Helper

Occupational Description

Help plumbers, pipefitters, steamfitters, or pipelayers by performing duties of lesser skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate skilled construction trade occupation (47-2011 through 47-2221). Exclude construction laborers who do not primarily assist plumbers, pipefitters, steamfitters, or pipelayers, and classify them under "Construction Laborers" (47-2061).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Assist plumbers by performing rough-ins, repairing and replacing fixtures, and locating and repairing leaking or broken pipes.
- Cut or drill holes in walls or floors to accommodate the passage of pipes.
- Measure, cut, thread and assemble new pipe, placing the assembled pipe in hangers or other supports.
- Mount brackets and hangers on walls and ceilings to hold pipes, and set sleeves or inserts to provide support for pipes.
- Requisition tools and equipment, select type and size of pipe, and collect and transport materials and equipment to work site.

Top Work Activities

- Performing General Physical Activities
- Handling and Moving Objects
- Inspecting Equipment, Structures, or Material

Top Skills

- Coordination
- Speaking
- Repairing

Top Knowledge

- Building and Construction
- Public Safety and Security
- Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 194 | 241 | 24.23 | 47 | 40 | 87 | \$18,290 | \$27,387 | \$31,936 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Helpers--Roofers

47-3016 | Architecture & Construction

Realistic

Declining Growth

LOW SKILL

Alternate Job Title(s): Roofer's Assistant

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Check to ensure that completed roofs are watertight.
- Sweep and clean roofs to prepare them for the application of new roofing materials.
- Locate worn or torn areas in roofs.
- Clean work areas and equipment.
- Maintain tools and equipment.

Top Work Activities

- Getting Information
- Monitor Processes, Materials, or Surroundings
- Making Decisions and Solving Problems

Top Skills

- Coordination
- Active Listening
- Monitoring

Top Knowledge

- Building and Construction
- Administration and Management
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 160 | 149 | -6.88 | 0 | 33 | 33 | \$19,641 | \$23,460 | \$25,369 |

Construction and Building Inspectors

47-4011 | Architecture & Construction

Realistic

Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Highway Inspector; Electrical Inspector; Architectural Inspector

Occupational Description

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.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Issue violation notices and stop-work orders, conferring with owners, violators, and authorities to explain regulations and recommend rectifications.
- Inspect bridges, dams, highways, buildings, wiring, plumbing, electrical circuits, sewers, heating systems, and foundations during and after construction for structural quality, general safety and conformance to specifications and codes.
- Approve and sign plans that meet required specifications.
- Review and interpret plans, blueprints, site layouts, specifications, and construction methods to ensure compliance to legal requirements and safety regulations.
- Monitor installation of plumbing, wiring, equipment, and appliances to ensure that installation is performed properly and is in compliance with applicable regulations.

Top Work Activities

- Inspecting Equipment, Structures, or Material
- Evaluating Information to Determine Compliance with Standards
- Updating and Using Relevant Knowledge

Top Skills

- Active Listening
- Reading Comprehension
- Speaking

Top Knowledge

- Building and Construction
- Engineering and Technology
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|-----------------|-------------|
| 118 | 126 | 6.78 | 8 | 24 | 32 | \$35,499 | \$49,706 | \$56,809 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Fence Erectors

47-4031 | Architecture & Construction | Realistic | Very High Growth

SOME SKILL

Alternate Job Title(s): Wire Fence Builder; Wood Fence Installer

Occupational Description

Erect and repair metal and wooden fences and fence gates around highways, industrial establishments, residences, or farms, using hand and power tools.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Establish the location for a fence, and gather information needed to ensure that there are no electric cables or water lines in the area.

Align posts, using lines or by sighting, and verify vertical alignment of posts, using plumb bobs or spirit levels.

Measure and lay out fence lines and mark posthole positions, following instructions, drawings, or specifications.

Dig postholes, using shovels, posthole diggers, or power-driven augers.

Set metal or wooden posts in upright positions in postholes.

Top Work Activities

Performing General Physical Activities

Handling and Moving Objects

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Operation and Control

Active Listening

Critical Thinking

Top Knowledge

Building and Construction

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 241 | 283 | 17.43 | 42 | 26 | 68 | \$21,411 | \$31,845 | \$37,063 |

Highway Maintenance Workers

47-4051 | Architecture & Construction | Realistic | Avg to Above Avg Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Snow Plow Operator; Road Patcher; Road Sign Installer

Occupational Description

Maintain highways, municipal and rural roads, airport runways, and rights-of-way. Duties include patching broken or eroded pavement, repairing guard rails, highway markers, and snow fences. May also mow or clear brush from along road or plow snow from roadway. Exclude "Tree Trimmers and Pruners" (37-3013).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Flag motorists to warn them of obstacles or repair work ahead.

Set out signs and cones around work areas to divert traffic.

Perform preventative maintenance on vehicles and heavy equipment.

Drive heavy equipment and vehicles with adjustable attachments to sweep debris from paved surfaces, mow grass and weeds, remove snow and ice, and spread salt and sand.

Drive trucks to transport crews and equipment to work sites.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Controlling Machines and Processes

Top Skills

Operation Monitoring

Operation and Control

Active Listening

Top Knowledge

Public Safety and Security

Building and Construction

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 549 | 607 | 10.56 | 58 | 149 | 207 | \$25,082 | \$32,391 | \$36,045 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Septic Tank Servicers and Sewer Pipe Cleaners

47-4071 | Architecture & Construction

Realistic

Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Sewage Screen Operator; Septic Tank Cleaner; Electric Sewer Cleaning Machine Operator

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Drive trucks to transport crews, materials, and equipment.

Communicate with supervisors and other workers, using equipment such as wireless phones, pagers, or radio telephones.

Prepare and keep records of actions taken, including maintenance and repair work.

Operate sewer cleaning equipment, including power rodders, high velocity water jets, sewer flushers, bucket machines, wayne balls, and vac-alls.

Ensure that repaired sewer line joints are tightly sealed before backfilling begins.

Top Work Activities

Performing for or Working Directly with the Public

Making Decisions and Solving Problems

Inspecting Equipment, Structures, or Material

Top Skills

Operation Monitoring

Operation and Control

Critical Thinking

Top Knowledge

Customer and Personal Service

Mechanical

Sales and Marketing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 50 | 55 | 10.00 | 5 | 14 | 19 | \$17,739 | \$30,612 | \$37,048 |

Derrick Operators, Oil and Gas

47-5011 | Natural Resources & Mining

Realistic

Exceptional Growth

HIGH DEMAND

HIGH WAGE

SOME SKILL

Alternate Job Title(s): Rotary Derrick Operator; Well Service Derrick Worker

Occupational Description

Rig derrick equipment and operate pumps to circulate mud through drill hole.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect derricks, or order their inspection, prior to being raised or lowered.

Inspect derricks for flaws, and clean and oil derricks in order to maintain proper working conditions.

Control the viscosity and weight of the drilling fluid.

Repair pumps, mud tanks, and related equipment.

Set and bolt crown blocks to posts at tops of derricks.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Repairing and Maintaining Mechanical Equipment

Top Skills

Operation Monitoring

Operation and Control

Critical Thinking

Top Knowledge

Mechanical

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|-----------------|-------------|
| 623 | 856 | 37.40 | 233 | 107 | 340 | \$49,794 | \$57,890 | \$61,938 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Service Unit Operators, Oil, Gas, and Mining

47-5013 | Natural Resources & Mining | Realistic | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **SOME SKILL**

Alternate Job Title(s): Fishing Tool Operator; Well Cleaner

Occupational Description

Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools, or other obstructions from drilling wells. May also perform similar services in mining exploration operations. Include fishing-tool technicians.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe load variations on strain gauges, mud pumps, and motor pressure indicators; and listen to engines, rotary chains, and other equipment in order to detect faulty operations or unusual well conditions.

Confer with others to gather information regarding pipe or tool sizes or borehole conditions in wells.

Drive truck-mounted units to well sites.

Install pressure-control devices onto wellheads.

Thread cables through derrick pulleys, using hand tools.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Getting Information

Top Skills

Operation Monitoring

Critical Thinking

Active Listening

Top Knowledge

Mechanical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 764 | 1,147 | 50.13 | 383 | 132 | 515 | \$34,429 | \$54,219 | \$64,114 |

Roustabouts, Oil and Gas

47-5071 | Natural Resources & Mining | Realistic | Exceptional Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Connection Worker; Oil Field Laborer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Clean up spilled oil by bailing it into barrels.

Unscrew or tighten pipes, casing, tubing, and pump rods, using hand and power wrenches and tongs.

Bolt together pump and engine parts.

Walk flow lines to locate leaks, using electronic detectors and making visual inspections.

Move pipes to and from trucks, using truck winches and motorized lifts, or by hand.

Top Work Activities

Handling and Moving Objects

Inspecting Equipment, Structures, or Material

Getting Information

Top Skills

Operation Monitoring

Operation and Control

Critical Thinking

Top Knowledge

Mechanical

Public Safety and Security

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 1,162 | 1,754 | 50.95 | 592 | 200 | 792 | \$33,700 | \$44,323 | \$49,634 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Helpers--Extraction Workers

47-5081 | Natural Resources & Mining | Realistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Blasters Helper; Tunnel Mucker; Mining Helper

Occupational Description

Help extraction craft workers, such as earth drillers, blasters and explosives workers, derrick operators, and mining machine operators, by performing duties of lesser skill. Duties include supplying equipment or cleaning work area. Exclude apprentice workers and report them with the appropriate extraction trade occupation (47-5011 through 47-5099).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Repair and maintain automotive and drilling equipment, using hand tools.
- Observe and monitor equipment operation during the extraction process in order to detect any problems.
- Drive moving equipment in order to transport materials and parts to excavation sites.
- Clean up work areas and remove debris after extraction activities are complete.
- Organize materials in order to prepare for use.

Top Work Activities

- Inspecting Equipment, Structures, or Material
- Operating Vehicles, Mechanized Devices, or Equipment
- Communicating with Supervisors, Peers, or Subordinates

Top Skills

- Monitoring
- Operation Monitoring
- Critical Thinking

Top Knowledge

- Law and Government
- Public Safety and Security
- Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 194 | 233 | 20.10 | 39 | 33 | 72 | \$25,066 | \$34,179 | \$38,735 |

First-Line Supervisors/Managers of Mechanics, Installers, and Repairers

49-1011 | Transportation, Distribution & Logistics | Enterprising | Below Average Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Marine Service Manager; Ground Crew Chief; Engine Repair Supervisor

Occupational Description

Supervise and coordinate the activities of mechanics, installers, and repairers. Exclude team or work leaders.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Determine schedules, sequences, and assignments for work activities, based on work priority, quantity of equipment and skill of personnel.
- Monitor employees' work levels and review work performance.
- Monitor tool and part inventories and the condition and maintenance of shops to ensure adequate working conditions.
- Investigate accidents and injuries, and prepare reports of findings.
- Recommend or initiate personnel actions, such as hires, promotions, transfers, discharges, and disciplinary measures.

Top Work Activities

- Communicating with Supervisors, Peers, or Subordinates
- Identifying Objects, Actions, and Events
- Inspecting Equipment, Structures, or Material

Top Skills

- Management of Personnel Resources
- Monitoring
- Critical Thinking

Top Knowledge

- Administration and Management
- Mechanical
- Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|-----------------|-------------|
| 1,165 | 1,219 | 4.64 | 54 | 305 | 359 | \$35,875 | \$56,519 | \$66,840 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Computer, Automated Teller, and Office Machine Repairers

49-2011 | Information Technology | Realistic | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): ATM Specialist; Cash Register Servicer; Computer Installer

Occupational Description

Repair, maintain, or install computers, word processing systems, automated teller machines, and electronic office machines, such as duplicating and fax machines.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Converse with customers in order to determine details of equipment problems.

Reassemble machines after making repairs or replacing parts.

Travel to customers' stores or offices to service machines, or to provide emergency repair service.

Reinstall software programs or adjust settings on existing software in order to fix machine malfunctions.

Advise customers concerning equipment operation, maintenance and programming.

Top Work Activities

Getting Information

Interacting with Computers

Repairing and Maintaining Electronic Equipment

Top Skills

Active Listening

Critical Thinking

Repairing

Top Knowledge

Computers and Electronics

Customer and Personal Service

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 464 | 422 | -9.05 | 0 | 80 | 80 | \$20,905 | \$33,141 | \$39,259 |

Telecommunications Equipment Installers and Repairers, Except Line Installers

49-2022 | Arts, AV Technology & Communications | Realistic | Below Average Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Central Office Equipment Installer; Electronics Installer; Exchange Mechanic

Occupational Description

Set-up, rearrange, or remove switching and dialing equipment used in central offices. Service or repair telephones and other communication equipment on customers' property. May install equipment in new locations or install wiring and telephone jacks in buildings under construction.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Note differences in wire and cable colors so that work can be performed correctly.

Test circuits and components of malfunctioning telecommunications equipment to isolate sources of malfunctions, using test meters, circuit diagrams, polarity probes, and other hand tools.

Test repaired, newly installed, or updated equipment to ensure that it functions properly and conforms to specifications, using test equipment and observation.

Drive crew trucks to and from work areas.

Inspect equipment on a regular basis in order to ensure proper functioning.

Top Work Activities

Communicating with Persons Outside Organization

Updating and Using Relevant Knowledge

Documenting and Recording Information

Top Skills

Operation Monitoring

Troubleshooting

Quality Control Analysis

Top Knowledge

Telecommunications

Computers and Electronics

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 676 | 706 | 4.44 | 30 | 118 | 148 | \$41,880 | \$54,752 | \$61,188 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Electrical and Electronics Repairers, Powerhouse, Substation, and Relay

49-2095 | Transportation, Distribution & Logistics | Realistic | Exceptional Growth |

HIGH WAGE **MEDIUM SKILL**

Alternate Job Title(s): Powerhouse Electrician; Relay Technician; Power Transformer Repairer

Occupational Description

Inspect, test, repair, or maintain electrical equipment in generating stations, substations, and in-service relays.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Construct, test, maintain, and repair substation relay and control systems.

Inspect and test equipment and circuits to identify malfunctions or defects, using wiring diagrams and testing devices such as ohmmeters, voltmeters, or ammeters.

Consult manuals, schematics, wiring diagrams, and engineering personnel in order to troubleshoot and solve equipment problems and to determine optimum equipment functioning.

Notify facility personnel of equipment shutdowns.

Open and close switches to isolate defective relays; then perform adjustments or repairs.

Top Work Activities

Repairing and Maintaining Electronic Equipment

Top Skills

Critical Thinking

Top Knowledge

Mechanical

Getting Information

Reading Comprehension

Design

Identifying Objects, Actions, and Events

Equipment Maintenance

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 141 | 183 | 29.79 | 42 | 24 | 66 | \$59,143 | \$70,370 | \$75,983 |

Electronic Equipment Installers and Repairers, Motor Vehicles

49-2096 | Manufacturing | Realistic | Declining Growth |

MEDIUM SKILL

Alternate Job Title(s): Auto Phone Installer; Automotive Electrician

Occupational Description

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

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Splice wires with knives or cutting pliers, and solder connections to fixtures and equipment.

Diagnose or repair problems with electronic equipment, such as sound, navigation, communication, and security equipment, in motor vehicles.

Inspect and test electrical or electronic systems to locate and diagnose malfunctions, using visual inspections and testing instruments such as oscilloscopes and voltmeters.

Install equipment and accessories such as stereos, navigation equipment, communication equipment, and security systems.

Estimate costs of repairs based on parts and labor charges.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Repairing

Top Knowledge

Mechanical

Repairing and Maintaining Electronic Equipment

Active Listening

Design

Identifying Objects, Actions, and Events

Equipment Maintenance

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 126 | 119 | -5.56 | 0 | 22 | 22 | \$21,032 | \$25,983 | \$28,459 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Electronic Home Entertainment Equipment Installers and Repairers

49-2097 | Marketing, Sales, Service & Tourism | Realistic | Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Electric Organ Technician; Television Mechanic; Satellite Dish Installer

Occupational Description

Repair, adjust, or install audio or television receivers, stereo systems, camcorders, video systems, or other electronic home entertainment equipment.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Disassemble entertainment equipment and repair or replace loose, worn, or defective components and wiring, using hand tools and soldering irons.

Install, service, and repair electronic equipment or instruments such as televisions, radios, and videocassette recorders.

Calibrate and test equipment, and locate circuit and component faults, using hand and power tools and measuring and testing instruments such as resistance meters and oscilloscopes.

Confer with customers to determine the nature of problems or to explain repairs.

Tune or adjust equipment and instruments to obtain optimum visual or auditory reception, according to specifications, manuals, and drawings.

Top Work Activities

Updating and Using Relevant Knowledge

Repairing and Maintaining Electronic Equipment

Getting Information

Top Skills

Troubleshooting

Repairing

Quality Control Analysis

Top Knowledge

Customer and Personal Service

Computers and Electronics

Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 168 | 199 | 18.45 | 31 | 29 | 60 | \$22,451 | \$29,641 | \$33,237 |

Automotive Body and Related Repairers

49-3021 | Transportation, Distribution & Logistics | Realistic | Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Auto Body Customizer; Collision Mechanic; Frame Straightener

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Follow supervisors' instructions as to which parts to restore or replace and how much time the job should take.

Review damage reports, prepare or review repair cost estimates, and plan work to be performed.

Sand body areas to be painted and cover bumpers, windows, and trim with masking tape or paper to protect them from the paint.

Fit and weld replacement parts into place, using wrenches and welding equipment, and grind down welds to smooth them, using power grinders and other tools.

Prime and paint repaired surfaces, using paint sprayguns and motorized sanders.

Top Work Activities

Updating and Using Relevant Knowledge

Getting Information

Inspecting Equipment, Structures, or Material

Top Skills

Repairing

Active Listening

Speaking

Top Knowledge

Mechanical

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 681 | 716 | 5.14 | 35 | 176 | 211 | \$23,434 | \$35,602 | \$41,686 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Automotive Service Technicians and Mechanics

49-3023 | Transportation, Distribution & Logistics | Realistic | Below Average Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Auto Brake Mechanic; Fuel Injection Servicer; Auto Transmission Specialist

Occupational Description

Diagnose, adjust, repair, or overhaul automotive vehicles. Exclude "Automotive Body and Related Repairers" (49-3021), "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031), and "Electronic Equipment Installers and Repairers, Motor Vehicles" (49-2096).

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Test drive vehicles, and test components and systems, using equipment such as infrared engine analyzers, compression gauges, and computerized diagnostic devices.

Examine vehicles to determine extent of damage or malfunctions.

Repair, reline, replace, and adjust brakes.

Follow checklists to ensure all important parts are examined, including belts, hoses, steering systems, spark plugs, brake and fuel systems, wheel bearings, and other potentially troublesome areas.

Confer with customers to obtain descriptions of vehicle problems, and to discuss work to be performed and future repair requirements.

Top Work Activities

Getting Information

Top Skills

Equipment Maintenance

Top Knowledge

Mechanical

Operating Vehicles, Mechanized Devices, or Equipment

Troubleshooting

Engineering and Technology

Making Decisions and Solving Problems

Repairing

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,339 | 2,423 | 3.59 | 84 | 446 | 530 | \$19,318 | \$31,954 | \$38,271 |

Bus and Truck Mechanics and Diesel Engine Specialists

49-3031 | Transportation, Distribution & Logistics | Realistic | Avg to Above Avg Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Tractor Trailer Mechanic; Diesel Mechanic; Farm Equipment Engine Mechanic

Occupational Description

Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines. Include mechanics working primarily with automobile diesel engines.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Use handtools such as screwdrivers, pliers, wrenches, pressure gauges, and precision instruments, as well as power tools such as pneumatic wrenches, lathes, welding equipment, and jacks and hoists.

Inspect brake systems, steering mechanisms, wheel bearings, and other important parts to ensure that they are in proper operating condition.

Adjust and reline brakes, align wheels, tighten bolts and screws, and reassemble equipment.

Raise trucks, buses, and heavy parts or equipment using hydraulic jacks or hoists.

Perform routine maintenance such as changing oil, checking batteries, and lubricating equipment and machinery.

Top Work Activities

Inspecting Equipment, Structures, or Material

Top Skills

Troubleshooting

Top Knowledge

Mechanical

Repairing and Maintaining Mechanical Equipment

Repairing

Public Safety and Security

Operating Vehicles, Mechanized Devices, or Equipment

Operation Monitoring

Transportation

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 1,227 | 1,362 | 11.00 | 135 | 282 | 417 | \$28,282 | \$38,396 | \$43,453 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Farm Equipment Mechanics

49-3041 | Transportation, Distribution & Logistics | Realistic | Exceptional Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Irrigation Equipment Mechanic; Dairy Equipment Installer

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Record details of repairs made and parts used.

Reassemble machines and equipment following repair; test operation; and make adjustments as necessary.

Maintain, repair, and overhaul farm machinery and vehicles, such as tractors, harvesters, and irrigation systems.

Examine and listen to equipment, read inspection reports, and confer with customers to locate and diagnose malfunctions.

Dismantle defective machines for repair, using hand tools.

Top Work Activities

Repairing and Maintaining Mechanical Equipment

Operating Vehicles, Mechanized Devices, or Equipment

Handling and Moving Objects

Top Skills

Repairing

Equipment Maintenance

Troubleshooting

Top Knowledge

Mechanical

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 678 | 825 | 21.68 | 147 | 129 | 276 | \$26,266 | \$33,190 | \$36,651 |

Mobile Heavy Equipment Mechanics, Except Engines

49-3042 | Transportation, Distribution & Logistics | Realistic | Very High Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Construction Equipment Mechanic; Fork Lift Mechanic; Bulldozer Mechanic

Occupational Description

Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining. Exclude "Rail Car Repairers" (49-3043) and "Bus and Truck Mechanics and Diesel Engine Specialists" (49-3031).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Repair and replace damaged or worn parts.

Dismantle and reassemble heavy equipment using hoists and hand tools.

Operate and inspect machines or heavy equipment to diagnose defects.

Test mechanical products and equipment after repair or assembly to ensure proper performance and compliance with manufacturers' specifications.

Clean, lubricate, and perform other routine maintenance work on equipment and vehicles.

Top Work Activities

Repairing and Maintaining Mechanical Equipment

Inspecting Equipment, Structures, or Material

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Troubleshooting

Equipment Maintenance

Repairing

Top Knowledge

Mechanical

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 748 | 853 | 14.04 | 105 | 142 | 247 | \$31,220 | \$45,912 | \$53,257 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Rail Car Repairers

49-3043 | Transportation, Distribution & Logistics | Realistic | Below Average Growth |

HIGH WAGE **SOME SKILL**

Alternate Job Title(s): Streetcar Repairer; Mine Car Mechanic

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Repair or replace defective or worn parts such as bearings, pistons, and gears, using hand tools, torque wrenches, power tools, and welding equipment.

Test units for operability before and after repairs.

Record conditions of cars, and repair and maintenance work performed or to be performed.

Remove locomotives, car mechanical units, or other components, using pneumatic hoists and jacks, pinch bars, hand tools, and cutting torches.

Inspect components such as bearings, seals, gaskets, wheels, and coupler assemblies to determine if repairs are needed.

Top Work Activities

Performing General Physical Activities

Handling and Moving Objects

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Troubleshooting

Repairing

Equipment Maintenance

Top Knowledge

Mechanical

Public Safety and Security

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 136 | 143 | 5.15 | 7 | 26 | 33 | \$40,663 | \$49,168 | \$53,421 |

Motorcycle Mechanics

49-3052 | Transportation, Distribution & Logistics | Realistic | Avg to Above Avg Growth |

MEDIUM SKILL

Alternate Job Title(s): Motor Scooter Mechanic; Motorcycle Repairer

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Repair and adjust motorcycle subassemblies, such as forks, transmissions, brakes, and drive chains, according to specifications.

Replace defective parts, using hand tools, arbor presses, flexible power presses, or power tools.

Connect test panels to engines and measure generator output, ignition timing, and other engine performance indicators.

Listen to engines, examine vehicle frames, or confer with customers to determine nature and extent of malfunction or damage.

Reassemble and test subassembly units.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Getting Information

Repairing and Maintaining Mechanical Equipment

Top Skills

Repairing

Active Listening

Troubleshooting

Top Knowledge

Mechanical

Customer and Personal Service

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 104 | 114 | 9.62 | 10 | 22 | 32 | \$19,570 | \$28,601 | \$33,116 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Outdoor Power Equipment and Other Small Engine Mechanics

49-3053 | Transportation, Distribution & Logistics | Realistic | Avg to Above Avg Growth |

SOME SKILL

Alternate Job Title(s): Chainsaw Mechanic; Lawn Mower Repairer; Snowmobile Mechanic

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Repair and maintain gasoline engines used to power equipment such as portable saws, lawn mowers, generators, and compressors.

Adjust points, valves, carburetors, distributors, and spark plug gaps, using feeler gauges.

Reassemble engines after repair or maintenance work is complete.

Record repairs made, time spent, and parts used.

Perform routine maintenance such as cleaning and oiling parts, honing cylinders, and tuning ignition systems.

Top Work Activities

Making Decisions and Solving Problems

Repairing and Maintaining Mechanical Equipment

Handling and Moving Objects

Top Skills

Repairing

Equipment Maintenance

Troubleshooting

Top Knowledge

Mechanical

English Language

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 119 | 131 | 10.08 | 12 | 25 | 37 | \$18,907 | \$27,898 | \$32,393 |

Bicycle Repairers

49-3091 | Transportation, Distribution & Logistics | Realistic | Exceptional Growth |

SOME SKILL

Alternate Job Title(s): Bicycle Mechanic

Occupational Description

Repair and service bicycles.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Install and adjust speed and gear mechanisms.

Assemble new bicycles.

Install, repair, and replace equipment or accessories, such as handlebars, stands, lights, and seats.

Align wheels.

Disassemble axles in order to repair, adjust, and replace defective parts, using hand tools.

Top Work Activities

Repairing and Maintaining Mechanical Equipment

Making Decisions and Solving Problems

Selling or Influencing Others

Top Skills

Repairing

Equipment Maintenance

Troubleshooting

Top Knowledge

Customer and Personal Service

Mechanical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 93 | 124 | 33.33 | 31 | 19 | 50 | \$18,004 | \$22,603 | \$24,903 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Recreational Vehicle Service Technicians

49-3092 | Transportation, Distribution & Logistics | Realistic | Below Average Growth |

SOME SKILL

Alternate Job Title(s): RV Mechanic

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine or test operation of parts or systems to ensure completeness of repairs.

Repair plumbing and propane gas lines, using caulking compounds and plastic or copper pipe.

Inspect recreational vehicles to diagnose problems and perform necessary adjustment, repair, or overhaul.

Locate and repair frayed wiring, broken connections, or incorrect wiring, using ohmmeters, soldering irons, tape, and hand tools.

Confer with customers, read work orders, or examine vehicles needing repair to determine the nature and extent of damage.

Top Work Activities

Updating and Using Relevant Knowledge

Getting Information

Performing General Physical Activities

Top Skills

Repairing

Active Listening

Speaking

Top Knowledge

Mechanical

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 67 | 72 | 7.46 | 5 | 14 | 19 | \$21,848 | \$31,541 | \$36,387 |

Tire Repairers and Changers

49-3093 | Transportation, Distribution & Logistics | Realistic | Declining Growth |

LOW SKILL

Alternate Job Title(s): Tire Balancer; Tire Fixer

Occupational Description

Repair and replace tires.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Identify and inflate tires correctly for the size and ply.

Place wheels on balancing machines to determine counterweights required to balance wheels.

Raise vehicles using hydraulic jacks.

Remount wheels onto vehicles.

Locate punctures in tubeless tires by visual inspection or by immersing inflated tires in water baths and observing air bubbles.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Performing General Physical Activities

Inspecting Equipment, Structures, or Material

Top Skills

Operation and Control

Active Listening

Operation Monitoring

Top Knowledge

Mechanical

Customer and Personal Service

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 474 | 473 | -0.21 | 0 | 98 | 98 | \$18,859 | \$24,432 | \$27,219 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

49-9021 | Architecture & Construction | Realistic | Exceptional Growth | **HIGH DEMAND** | **HIGH WAGE** | **MEDIUM SKILL**

Alternate Job Title(s): Furnace Converter; Gas Furnace Installer; Oil Burner Repairer

Occupational Description

Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Test electrical circuits and components for continuity, using electrical test equipment.
- Test pipe or tubing joints and connections for leaks, using pressure gauge or soap-and-water solution.
- Join pipes or tubing to equipment and to fuel, water, or refrigerant source, to form complete circuit.
- Reassemble and test equipment following repairs.
- Obtain and maintain required certifications.

Top Work Activities

- Performing General Physical Activities
- Making Decisions and Solving Problems
- Handling and Moving Objects

Top Skills

- Installation
- Troubleshooting
- Repairing

Top Knowledge

- Mechanical
- Customer and Personal Service
- Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 699 | 907 | 29.76 | 208 | 113 | 321 | \$32,768 | \$46,973 | \$54,075 |

Home Appliance Repairers

49-9031 | Marketing, Sales, Service & Tourism | Realistic | Below Average Growth | **MEDIUM SKILL**

Alternate Job Title(s): Window Air Conditioner Mechanic; Vacuum Cleaner Repairer; Washing Machine Installer

Occupational Description

Repair, adjust, or install all types of electric or gas household appliances, such as refrigerators, washers, dryers, and ovens.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Disassemble appliances so that problems can be diagnosed and repairs can be made.
- Bill customers for repair work, and collect payment.
- Trace electrical circuits, following diagrams, and conduct tests with circuit testers and other equipment to locate shorts and grounds.
- Service and repair domestic electrical and/or gas appliances such as clothes washers, refrigerators, stoves, and dryers.
- Replace worn and defective parts such as switches, bearings, transmissions, belts, gears, circuit boards, or defective wiring.

Top Work Activities

- Repairing and Maintaining Mechanical Equipment
- Performing for or Working Directly with the Public
- Updating and Using Relevant Knowledge

Top Skills

- Repairing
- Equipment Maintenance
- Troubleshooting

Top Knowledge

- Customer and Personal Service
- Sales and Marketing
- Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 170 | 184 | 8.24 | 14 | 26 | 40 | \$20,144 | \$31,274 | \$36,839 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Maintenance and Repair Workers, General

49-9042 | Manufacturing | Realistic | High Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Building Maintenance Repairer; Trouble Shooting Mechanic; Mechanical Adjuster

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Repair or replace defective equipment parts, using hand tools and power tools, and reassemble equipment.

Perform routine preventive maintenance to ensure that machines continue to run smoothly, building systems operate efficiently, or the physical condition of buildings does not deteriorate.

Inspect drives, motors, and belts, check fluid levels, replace filters, or perform other maintenance actions, following checklists.

Use tools ranging from common hand and power tools, such as hammers, hoists, saws, drills, and wrenches, to precision measuring instruments and electrical and electronic testing devices.

Assemble, install or repair wiring, electrical and electronic components, pipe systems and plumbing, machinery, and equipment.

| | | |
|--|-----------------------|----------------------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Inspecting Equipment, Structures, or Material | Equipment Maintenance | Mechanical |
| Performing General Physical Activities | Repairing | Building and Construction |
| Repairing and Maintaining Mechanical Equipment | Critical Thinking | Public Safety and Security |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
| 2,662 | 2,972 | 11.65 | 310 | | 410 | \$24,660 | \$36,874 | \$42,982 |

Maintenance Workers, Machinery

49-9043 | Manufacturing | Realistic | Very High Growth | **HIGH WAGE** | **SOME SKILL**

Alternate Job Title(s): Belt Repairer; Grease Packer Machine Oiler

Occupational Description

Lubricate machinery, change parts, or perform other routine machinery maintenance. Exclude "Maintenance and Repair Workers, General" (49-9042).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Reassemble machines after the completion of repair or maintenance work.

Start machines and observe mechanical operation to determine efficiency and to detect problems.

Inspect or test damaged machine parts, and mark defective areas or advise supervisors of repair needs.

Lubricate or apply adhesives or other materials to machines, machine parts, or other equipment, according to specified procedures.

Install, replace, or change machine parts and attachments, according to production specifications.

| | | |
|--|-----------------------|---------------|
| Top Work Activities | Top Skills | Top Knowledge |
| Repairing and Maintaining Mechanical Equipment | Operation Monitoring | Mechanical |
| Controlling Machines and Processes | Equipment Maintenance | Mathematics |
| Handling and Moving Objects | Troubleshooting | Design |

| | | | | | | | | |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
| 100 | 117 | 17.00 | 17 | | 15 | \$34,248 | \$46,015 | \$51,898 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Millwrights

49-9044 | Manufacturing

Realistic

Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Machine Erector; Machine Rigger; Machinery Dismantler

Occupational Description

Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Insert shims, adjust tension on nuts and bolts, or position parts, using hand tools and measuring instruments, to set specified clearances between moving and stationary parts.

Align machines and equipment, using hoists, jacks, hand tools, squares, rules, micrometers, and plumb bobs.

Assemble and install equipment, using hand tools and power tools.

Lay out mounting holes, using measuring instruments, and drill holes with power drill.

Signal crane operator to lower basic assembly units to bedplate, and align unit to centerline.

Top Work Activities

Repairing and Maintaining Mechanical Equipment

Handling and Moving Objects

Performing General Physical Activities

Top Skills

Installation

Operation Monitoring

Equipment Maintenance

Top Knowledge

Mechanical

Mathematics

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 88 | 96 | 9.09 | 8 | 18 | 26 | \$41,064 | \$53,639 | \$59,926 |

Electrical Power-Line Installers and Repairers

49-9051 | Architecture & Construction

Realistic

Declining Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Pole Climber; High Tension Tester; Electric Utility Wire Stretcher

Occupational Description

Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers. Exclude "Electrical and Electronics Repairers, Powerhouse, Substation, and Relay" (49-2095).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adhere to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas.

Open switches or attach grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs.

Climb poles or use truck-mounted buckets to access equipment.

Place insulating or fireproofing materials over conductors and joints.

Install, maintain, and repair electrical distribution and transmission systems, including conduits, cables, wires, and related equipment, such as transformers, circuit breakers, and switches.

Top Work Activities

Handling and Moving Objects

Operating Vehicles, Mechanized Devices, or Equipment

Controlling Machines and Processes

Top Skills

Active Listening

Monitoring

Critical Thinking

Top Knowledge

Customer and Personal Service

Mechanical

Building and Construction

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 625 | 624 | -0.16 | 0 | 222 | 222 | \$41,277 | \$56,135 | \$63,564 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Telecommunications Line Installers and Repairers

49-9052 | Arts, A/V Technology & Communications

Realistic

Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Telecommunications Cable Splicer; Telecommunications Wire Stretcher; Cable Television Installer

Occupational Description

String and repair telephone and television cable, including fiber optics and other equipment for transmitting messages or television programming.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Travel to customers' premises to install, maintain, or repair audio and visual electronic reception equipment or accessories.

Inspect or test lines or cables, recording and analyzing test results, to assess transmission characteristics and locate faults or malfunctions.

Splice cables, using hand tools, epoxy, or mechanical equipment.

Measure signal strength at utility poles, using electronic test equipment.

Set up service for customers, installing, connecting, testing, or adjusting equipment.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Handling and Moving Objects

Performing General Physical Activities

Top Skills

Active Listening

Critical Thinking

Operation Monitoring

Top Knowledge

Telecommunications

Customer and Personal Service

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 343 | 335 | -2.33 | 0 | 53 | 53 | \$27,811 | \$40,267 | \$46,496 |

Medical Equipment Repairers

49-9062 | Marketing, Sales, Service & Tourism

Realistic

Exceptional Growth

MEDIUM SKILL

Alternate Job Title(s): Biomedical Equipment Technician; Hearing Aid Mechanic; Surgical Instrument Mechanic

Occupational Description

Test, adjust, or repair biomedical or electromedical equipment.

Associate's degree is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Test and calibrate components and equipment following manufacturers' manuals and troubleshooting techniques, using hand tools, power tools and measuring devices.

Keep records of maintenance, repair, and required updates of equipment.

Inspect and test malfunctioning medical and related equipment following manufacturers' specifications, using test and analysis instruments.

Disassemble malfunctioning equipment and remove, repair and replace defective parts such as motors, clutches or transformers.

Perform preventive maintenance or service such as cleaning, lubricating and adjusting equipment.

Top Work Activities

Repairing and Maintaining Electronic Equipment

Repairing and Maintaining Mechanical Equipment

Inspecting Equipment, Structures, or Material

Top Skills

Equipment Maintenance

Troubleshooting

Repairing

Top Knowledge

Computers and Electronics

Engineering and Technology

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 73 | 94 | 28.77 | 21 | 21 | 42 | \$24,953 | \$36,473 | \$42,233 |

Coin, Vending, and Amusement Machine Servicers and Repairers

49-9091 | Marketing, Sales, Service & Tourism

Realistic

High Growth

SOME SKILL

Alternate Job Title(s): Cigarette Machine Mechanic; Slot Machine Mechanic; Video Game Mechanic

Occupational Description

Install, service, adjust, or repair coin, vending, or amusement machines including video games, juke boxes, pinball machines, or slot machines.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Fill machines with products, ingredients, money, and other supplies.

Keep records of merchandise distributed and money collected.

Collect coins and bills from machines, prepare invoices, and settle accounts with concessionaires.

Make service calls to maintain and repair machines.

Inspect machines and meters to determine causes of malfunctions and fix minor problems such as jammed bills or stuck products.

Top Work Activities

Inspecting Equipment, Structures, or Material

Handling and Moving Objects

Operating Vehicles, Mechanized Devices, or Equipment

Top Skills

Operation Monitoring

Equipment Maintenance

Repairing

Top Knowledge

Customer and Personal Service

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 183 | 204 | 11.48 | 21 | 61 | 82 | \$21,997 | \$36,506 | \$43,761 |

Manufactured Building and Mobile Home Installers

49-9095 | Marketing, Sales, Service & Tourism

Realistic

Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Mobile Home Mechanic; Housetrailer Servicer

Occupational Description

Move or install mobile homes or prefabricated buildings.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Seal open sides of modular units to prepare them for shipment, using polyethylene sheets, nails, and hammers.

Move and set up mobile homes or prefabricated buildings on owners' lots or at mobile home parks.

Inspect, examine, and test the operation of parts or systems to evaluate operating condition and to determine if repairs are needed.

Connect water hoses to inlet pipes of plumbing systems, and test operation of plumbing fixtures.

Remove damaged exterior panels, repair and replace structural frame members, and seal leaks, using hand tools.

Top Work Activities

Inspecting Equipment, Structures, or Material

Controlling Machines and Processes

Making Decisions and Solving Problems

Top Skills

Critical Thinking

Operation and Control

Quality Control Analysis

Top Knowledge

Building and Construction

Public Safety and Security

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 184 | 205 | 11.41 | 21 | 12 | 33 | \$27,091 | \$33,390 | \$36,540 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Helpers--Installation, Maintenance, and Repair Workers

49-9098 | Architecture & Construction

Realistic

Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Mechanic's Helper; Diver's Helper; Blacksmith's Helper

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Tend and observe equipment and machinery to verify efficient and safe operation.

Examine and test machinery, equipment, components, and parts for defects to ensure proper functioning.

Adjust, connect, or disconnect wiring, piping, tubing, and other parts, using hand or power tools.

Install or replace machinery, equipment, and new or replacement parts and instruments, using hand or power tools.

Clean or lubricate vehicles, machinery, equipment, instruments, tools, work areas, and other objects, using hand tools, power tools, and cleaning equipment.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Inspecting Equipment, Structures, or Material

Performing General Physical Activities

Top Skills

Active Listening

Operation Monitoring

Speaking

Top Knowledge

Mechanical

Public Safety and Security

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 534 | 562 | 5.24 | 28 | 256 | 284 | \$16,024 | \$23,901 | \$27,840 |

First-Line Supervisors/Managers of Production and Operating Workers

51-1011 | Manufacturing

Enterprising

Below Average Growth

HIGH DEMAND

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Laundromat Manager; Station Chief; Assembly Line Supervisor

Occupational Description

Supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators. Exclude team or work leaders.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Enforce safety and sanitation regulations.

Direct and coordinate the activities of employees engaged in the production or processing of goods, such as inspectors, machine setters, and fabricators.

Read and analyze charts, work orders, production schedules, and other records and reports to determine production requirements and to evaluate current production estimates and outputs.

Confer with other supervisors to coordinate operations and activities within or between departments.

Plan and establish work schedules, assignments, and production sequences to meet production goals.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Coordinating the Work and Activities of Others

Top Skills

Critical Thinking

Time Management

Active Listening

Top Knowledge

Production and Processing

Administration and Management

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,542 | 1,612 | 4.54 | 70 | 208 | 278 | \$34,302 | \$53,680 | \$63,369 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Electrical and Electronic Equipment Assemblers

51-2022 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Anode Builder; Battery Builder; Industrial Equipment Wirer

Occupational Description

Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect and test wiring installations, assemblies, and circuits for resistance factors and for operation; and record results.

Assemble electrical or electronic systems and support structures; and install components, units, subassemblies, wiring, and assembly casings, using rivets, bolts, soldering and micro-welding equipment.

Adjust, repair, or replace electrical or electronic component parts to correct defects and to ensure conformance to specifications.

Clean parts, using cleaning solutions, air hoses, and cloths.

Read and interpret schematic drawings, diagrams, blueprints, specifications, work orders, and reports in order to determine materials requirements and assembly instructions.

Top Work Activities

Identifying Objects, Actions, and Events

Handling and Moving Objects

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Monitoring

Speaking

Top Knowledge

Production and Processing

Administration and Management

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 252 | 242 | -3.97 | 0 | 39 | 39 | \$16,523 | \$24,390 | \$28,324 |

Structural Metal Fabricators and Fitters

51-2041 | Manufacturing

Realistic

Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Manufacturing Ornamental Metal Worker; Metal Box Maker; Protector Plate Attacher

Occupational Description

Fabricate, lay out, position, align, and fit parts of structural metal products.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Position, align, fit, and weld parts to form complete units or subunits, following blueprints and layout specifications, and using jigs, welding torches, and hand tools.

Verify conformance of workpieces to specifications, using squares, rulers, and measuring tapes.

Tack-weld fitted parts together.

Lay out and examine metal stock or workpieces to be processed to ensure that specifications are met.

Align and fit parts according to specifications, using jacks, turnbuckles, wedges, drift pins, pry bars, and hammers.

Top Work Activities

Getting Information

Handling and Moving Objects

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Design

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 285 | 294 | 3.16 | 9 | 60 | 69 | \$25,103 | \$29,729 | \$32,043 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Fiberglass Laminators and Fabricators

51-2091 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Fiberglass Ski Maker; Fiberglass Boat Builder; Golf Cart Maker

Occupational Description

Laminate layers of fiberglass on molds to form boat decks and hulls, bodies for golf carts, automobiles, or other products.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Release air bubbles and smooth seams, using rollers.

Spray chopped fiberglass, resins, and catalysts onto prepared molds or dies using pneumatic spray guns with chopper attachments.

Select precut fiberglass mats, cloth, and woodbracing materials as required by projects being assembled.

Pat or press layers of saturated mat or cloth into place on molds, using brushes or hands, and smooth out wrinkles and air bubbles with hands or squeegees.

Mix catalysts into resins, and saturate cloth and mats with mixtures, using brushes.

Top Work Activities

Handling and Moving Objects

Getting Information

Training and Teaching Others

Top Skills

Monitoring

Critical Thinking

Operation Monitoring

Top Knowledge

Production and Processing

English Language

Chemistry

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 350 | 324 | -7.43 | 0 | 79 | 79 | \$25,501 | \$28,570 | \$30,105 |

Team Assemblers

51-2092 | Manufacturing

Realistic

Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): N/A

Occupational Description

Work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis. May participate in making management decisions affecting the work. Team leaders who work as part of the team should be included. Exclude assemblers (51-2011 through 51-2099) who continuously perform the same task.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Rotate through all the tasks required in a particular production process.

Determine work assignments and procedures.

Shovel and sweep work areas.

Top Work Activities

Handling and Moving Objects

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Top Skills

Coordination

Active Listening

Speaking

Top Knowledge

Production and Processing

Mechanical

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 2,956 | 3,154 | 6.70 | 198 | 666 | 864 | \$20,656 | \$27,871 | \$31,478 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Bakers

51-3011 | Manufacturing

Realistic

Below Average Growth

SOME SKILL

Alternate Job Title(s): Cake Maker; Head Baker; Pastry Finisher

Occupational Description

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

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe color of products being baked, and adjust oven temperatures, humidity, and conveyor speeds accordingly.

Set oven temperatures and place items into hot ovens for baking.

Combine measured ingredients in bowls of mixing, blending, or cooking machinery.

Measure and weigh flour and other ingredients to prepare batters, doughs, fillings, and icings, using scales and graduated containers.

Roll, knead, cut, and shape dough to form sweet rolls, pie crusts, tarts, cookies, and other products.

Top Work Activities

Getting Information

Monitor Processes, Materials, or Surroundings

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Monitoring

Reading Comprehension

Top Knowledge

Food Production

Production and Processing

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 443 | 443 | 0.00 | 0 | 114 | 114 | \$16,768 | \$21,969 | \$24,569 |

Butchers and Meat Cutters

51-3021 | Manufacturing

Realistic

Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Carver; Meat Department Manager; Cleaver

Occupational Description

Cut, trim, or prepare consumer-sized portions of meat for use or sale in retail establishments.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Wrap, weigh, label and price cuts of meat.

Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper's eye.

Prepare special cuts of meat ordered by customers.

Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form.

Receive, inspect, and store meat upon delivery, to ensure meat quality.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Getting Information

Top Skills

Monitoring

Active Listening

Critical Thinking

Top Knowledge

Production and Processing

Food Production

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 513 | 526 | 2.53 | 13 | 164 | 177 | \$16,712 | \$23,955 | \$27,576 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders

51-3091 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Coffee Roaster; Smokehouse Worker; Curing Room Worker

Occupational Description

Operate or tend food or tobacco roasting, baking, or drying equipment, including hearth ovens, kiln driers, roasters, char kilns, and vacuum drying equipment.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe, feel, taste, or otherwise examine products during and after processing, in order to ensure conformance to standards.

Observe temperature, humidity, pressure gauges, and product samples, and adjust controls, such as thermostats and valves, in order to maintain prescribed operating conditions for specific stages.

Operate or tend equipment that roasts, bakes, dries, or cures food items such as cocoa and coffee beans, grains, nuts, and bakery products.

Set temperature and time controls; light ovens, burners, driers, or roasters; and start equipment, such as conveyors, cylinders, blowers, driers, or pumps.

Observe flow of materials and listen for machine malfunctions, such as jamming or spillage, and notify supervisors if corrective actions fail.

Top Work Activities

Getting Information

Top Skills

Operation Monitoring

Top Knowledge

Food Production

Communicating with Supervisors, Peers, or Subordinates

Monitoring

Production and Processing

Identifying Objects, Actions, and Events

Critical Thinking

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 117 | 115 | -1.71 | 0 | 34 | 34 | \$24,660 | \$33,985 | \$38,648 |

Food Batchmakers

51-3092 | Manufacturing

Realistic

Very High Growth

SOME SKILL

Alternate Job Title(s): Candy Maker; Honey Blender; Peanut Butter Maker

Occupational Description

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

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Record production and test data for each food product batch, such as the ingredients used, temperature, test results, and time cycle.

Observe gauges and thermometers to determine if the mixing chamber temperature is within specified limits, and turn valves to control the temperature.

Clean and sterilize vats and factory processing areas.

Press switches and turn knobs to start, adjust, and regulate equipment such as beaters, extruders, discharge pipes, and salt pumps.

Observe and listen to equipment to detect possible malfunctions, such as leaks or plugging, and report malfunctions or undesirable tastes to supervisors.

Top Work Activities

Getting Information

Top Skills

Operation and Control

Top Knowledge

Production and Processing

Monitor Processes, Materials, or Surroundings

Reading Comprehension

Mathematics

Handling and Moving Objects

Monitoring

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 338 | 386 | 14.20 | 48 | 81 | 129 | \$15,051 | \$20,175 | \$22,738 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Food Cooking Machine Operators and Tenders

51-3093 | Manufacturing | Realistic | Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Doughnut Maker; Sausage Cooker; Potato Chip Fryer

Occupational Description

Operate or tend cooking equipment, such as steam cooking vats, deep fry cookers, pressure cookers, kettles, and boilers, to prepare food products. Exclude "Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders" (51-3091).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Record production and test data, such as processing steps, temperature and steam readings, cooking time, batches processed, and test results.
- Listen for malfunction alarms, and shut down equipment and notify supervisors when necessary.
- Collect and examine product samples during production to test them for quality, color, content, consistency, viscosity, acidity, or specific gravity.
- Observe gauges, dials, and product characteristics, and adjust controls to maintain appropriate temperature, pressure, and flow of ingredients.
- Read work orders, recipes, or formulas to determine cooking times and temperatures, and ingredient specifications.

Top Work Activities

Monitor Processes, Materials, or Surroundings

Controlling Machines and Processes

Getting Information

Top Skills

Operation Monitoring

Reading Comprehension

Operation and Control

Top Knowledge

Production and Processing

Food Production

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|-------|----------------|-------------|
| 162 | 180 | 11.11 | 18 | 47 | 65 | N/A | N/A | N/A |

Computer-Controlled Machine Tool Operators, Metal and Plastic

51-4011 | Manufacturing | Realistic | Very High Growth

SOME SKILL

Alternate Job Title(s): Numerical Control Machine Operator; Robot Operator

Occupational Description

Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Measure dimensions of finished workpieces to ensure conformance to specifications, using precision measuring instruments, templates, and fixtures.
- Remove and replace dull cutting tools.
- Mount, install, align, and secure tools, attachments, fixtures, and workpieces on machines, using hand tools and precision measuring instruments.
- Listen to machines during operation in order to detect sounds such as those made by dull cutting tools or excessive vibration and adjust machines to compensate for problems.
- Adjust machine feed and speed, change cutting tools, or adjust machine controls when automatic programming is faulty or if machines malfunction.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Getting Information

Top Skills

Monitoring

Operation Monitoring

Critical Thinking

Top Knowledge

Mechanical

Mathematics

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|----------------------|------------------|----------|----------------|-------------|
| 168 | 198 | 17.86 | 30 | 33 | 63 | \$28,678 | \$37,310 | \$41,626 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic

51-4021 | Manufacturing

Realistic

Very High Growth

SOME SKILL

Alternate Job Title(s): Draw Bench Operator; Tube Drawer; Wire Drawing Setter

Occupational Description

Set up, operate, or tend machines to extrude or draw thermoplastic or metal materials into tubes, rods, hoses, wire, bars, or structural shapes.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Measure and examine extruded products in order to locate defects, and to check for conformance to specifications; adjust controls as necessary to alter products.

Determine setup procedures and select machine dies and parts, according to specifications.

Install dies, machine screws, and sizing rings on machines that extrude thermoplastic or metal materials.

Change dies on extruding machines according to production line changes.

Start machines and set controls to regulate vacuum, air pressure, sizing rings, and temperature, and to synchronize speed of extrusion.

Top Work Activities

Controlling Machines and Processes

Performing General Physical Activities

Making Decisions and Solving Problems

Top Skills

Operation Monitoring

Monitoring

Operation and Control

Top Knowledge

Mechanical

Education and Training

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 190 | 218 | 14.74 | 28 | | 65 | \$24,957 | \$31,103 | \$34,176 |

Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic

51-4031 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Perforator Operator; Crimping Machine Operator; Four Slide Machine Setter

Occupational Description

Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Measure completed workpieces to verify conformance to specifications, using micrometers, gauges, calipers, templates, or rulers.

Examine completed workpieces for defects such as chipped edges and marred surfaces, and sort defective pieces according to types of flaws.

Read work orders and production schedules to determine specifications, such as materials to be used, locations of cutting lines, and dimensions and tolerances.

Load workpieces, plastic material, or chemical solutions into machines.

Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Operation Monitoring

Active Listening

Operation and Control

Top Knowledge

Production and Processing

Mathematics

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|---|----------------|----------|----------------|-------------|
| 553 | 477 | -13.74 | 0 | | 109 | \$21,756 | \$31,880 | \$36,941 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic

51-4032 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Drill Press Operator; Jewel Cupping Machine Operator; Reaming Press Operator

Occupational Description

Set up, operate, or tend drilling machines to drill, bore, ream, mill, or countersink metal or plastic work pieces.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Verify conformance of machined work to specifications, using measuring instruments such as calipers, micrometers, and fixed and telescoping gauges.

Study machining instructions, job orders, and blueprints to determine dimensional and finish specifications, sequences of operations, setups, and tooling requirements.

Select and set cutting speeds, feed rates, depths of cuts, and cutting tools according to machining instructions or knowledge of metal properties.

Install tools in spindles.

Change worn cutting tools, using wrenches.

Top Work Activities

Inspecting Equipment, Structures, or Material

Getting Information

Handling and Moving Objects

Top Skills

Operation Monitoring

Monitoring

Operation and Control

Top Knowledge

Mechanical

Mathematics

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Average [Mean] | Entry | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------------|----------|-------------|
| 64 | 53 | -17.19 | 0 | 5 | \$29,218 | \$18,531 | \$34,561 |

Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic

51-4033 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Barrel Polisher; Jewel Bearing Facer; Metal Filer

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect or measure finished workpieces to determine conformance to specifications, using measuring instruments such as gauges or micrometers.

Lift and position workpieces, manually or with hoists, and secure them in hoppers or on machine tables, faceplates, or chucks, using clamps.

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 workpieces.

Observe machine operations to detect any problems; make necessary adjustments to correct problems.

Set and adjust machine controls according to product specifications, utilizing knowledge of machine operation.

Top Work Activities

Controlling Machines and Processes

Monitor Processes, Materials, or Surroundings

Handling and Moving Objects

Top Skills

Operation Monitoring

Operation and Control

Quality Control Analysis

Top Knowledge

Mechanical

Production and Processing

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Average [Mean] | Entry | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------------|----------|-------------|
| 160 | 146 | -8.75 | 0 | 23 | \$28,776 | \$23,636 | \$31,345 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic

51-4034 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Gear Cutter; Screw Machine Operator; Threading Machine Setter

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect sample workpieces to verify conformance with specifications, using instruments such as gauges, micrometers, and dial indicators.

Study blueprints, layouts or charts, and job orders for information on specifications and tooling instructions, and to determine material requirements and operational sequences.

Adjust machine controls and change tool settings in order to keep dimensions within specified tolerances.

Move controls to set cutting speeds and depths and feed rates, and to position tools in relation to workpieces.

Start lath or turning machines and observe operations to ensure that specifications are met.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Getting Information

Top Skills

Operation Monitoring

Quality Control Analysis

Monitoring

Top Knowledge

Mechanical

Mathematics

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 218 | 164 | -24.77 | 0 | 36 | 36 | N/A | N/A | N/A |

Machinists

51-4041 | Manufacturing

Realistic

Below Average Growth

MEDIUM SKILL

Alternate Job Title(s): Electrical Instrument Maker; Machine Fitter

Occupational Description

Set up and operate a variety of machine tools to produce precision parts and instruments. Include precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, shop mathematics, metal properties, layout, and machining procedures.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Calculate dimensions and tolerances using knowledge of mathematics and instruments such as micrometers and vernier calipers.

Align and secure holding fixtures, cutting tools, attachments, accessories, and materials onto machines.

Select the appropriate tools, machines, and materials to be used in preparation of machinery work.

Monitor the feed and speed of machines during the machining process.

Machine parts to specifications using machine tools such as lathes, milling machines, shapers, or grinders.

Top Work Activities

Controlling Machines and Processes

Getting Information

Making Decisions and Solving Problems

Top Skills

Operation Monitoring

Quality Control Analysis

Operation and Control

Top Knowledge

Mechanical

Production and Processing

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 549 | 582 | 6.01 | 33 | 72 | 105 | \$28,999 | \$39,935 | \$45,403 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic

51-4072 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Centrifugal Casting Machine Operator; Injection Molding Machine Setter; Core Moulder

Occupational Description

Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe continuous operation of automatic machines to ensure that products meet specifications and to detect jams or malfunctions, making adjustments as necessary.

Measure and visually inspect products for surface and dimension defects in order to ensure conformance to specifications, using precision measuring instruments.

Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.

Position and secure workpieces on machines, and start feeding mechanisms.

Turn valves and dials of machines to regulate pressure, temperature, and speed and feed rates, and to set cycle times.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Inspecting Equipment, Structures, or Material

Top Skills

Operation Monitoring

Operation and Control

Quality Control Analysis

Top Knowledge

Production and Processing

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 326 | 322 | -1.23 | 0 | 68 | 68 | \$24,548 | \$29,975 | \$32,689 |

Tool and Die Makers

51-4111 | Manufacturing

Realistic

Below Average Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Die Sinker; Die Finisher; Sawsmith

Occupational Description

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.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Study blueprints, sketches, models, or specifications to plan sequences of operations for fabricating tools, dies, or assemblies.

Verify dimensions, alignments, and clearances of finished parts for conformance to specifications, using measuring instruments such as calipers, gauge blocks, micrometers, and dial indicators.

Visualize and compute dimensions, sizes, shapes, and tolerances of assemblies, based on specifications.

Set up and operate conventional or computer numerically controlled machine tools such as lathes, milling machines, and grinders to cut, bore, grind, or otherwise shape parts to prescribed dimensions and finishes.

File, grind, shim, and adjust different parts to properly fit them together.

Top Work Activities

Controlling Machines and Processes

Getting Information

Updating and Using Relevant Knowledge

Top Skills

Operation and Control

Active Listening

Complex Problem Solving

Top Knowledge

Mechanical

Design

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 103 | 103 | 0.00 | 0 | 6 | 6 | \$34,134 | \$46,172 | \$52,191 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Welders, Cutters, Solderers, and Brazers

51-4121 | Manufacturing | Realistic | Below Average Growth | **HIGH DEMAND** | **MEDIUM SKILL**

Alternate Job Title(s): Acetylene Burner; Arc Welder; Blow Torch Operator

Occupational Description

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.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate safety equipment and use safe work habits.

Weld components in flat, vertical, or overhead positions.

Ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits.

Clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding.

Detect faulty operation of equipment or defective materials and notify supervisors.

Top Work Activities

Handling and Moving Objects

Controlling Machines and Processes

Getting Information

Top Skills

Critical Thinking

Active Listening

Monitoring

Top Knowledge

Mechanical

Design

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,550 | 2,570 | 0.78 | 20 | 781 | 801 | \$26,514 | \$36,056 | \$40,827 |

Tool Grinders, Filers, and Sharpeners

51-4194 | Manufacturing | Realistic | Below Average Growth | **SOME SKILL**

Alternate Job Title(s): Die Polisher; Precision Honer; Tool Maintenance Worker

Occupational Description

Perform precision smoothing, sharpening, polishing, or grinding of metal objects.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Dress grinding wheels, according to specifications.

Monitor machine operations to determine whether adjustments are necessary; stop machines when problems occur.

Inspect, feel, and measure workpieces to ensure that surfaces and dimensions meet specifications.

Set up and operate grinding or polishing machines to grind metal workpieces such as dies, parts, and tools.

Remove finished workpieces from machines and place them in boxes or on racks; set aside pieces that are defective.

Top Work Activities

Controlling Machines and Processes

Getting Information

Making Decisions and Solving Problems

Top Skills

Operation Monitoring

Operation and Control

Equipment Maintenance

Top Knowledge

Production and Processing

Mechanical

Engineering and Technology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 50 | 50 | 0.00 | 0 | 16 | 16 | \$26,234 | \$34,868 | \$39,185 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Bindery Workers

51-5011 | Arts, AV Technology & Communications | Realistic | Declining Growth |

SOME SKILL

Alternate Job Title(s): Book Coverer; Stitching Machine Operator; Bookbinding Machine Operator

Occupational Description

Set up or operate binding machines that produce books and other printed materials. Include hand bindery workers. Exclude "Bookbinders" (51-5012).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read work orders to determine setup specifications and instructions.

Examine stitched, collated, bound, and unbound product samples for defects such as imperfect bindings, ink spots, torn or loose pages, and loose and uncut threads.

Start machines and make trial runs to verify accuracy of machine setups.

Set up, or set up and operate, machines that perform binding operations such as pressing, folding, and trimming on books and related articles.

Move controls to adjust and activate bindery machines.

Top Work Activities

Getting Information

Handling and Moving Objects

Controlling Machines and Processes

Top Skills

Operation Monitoring

Monitoring

Operation and Control

Top Knowledge

Production and Processing

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 135 | 113 | -16.30 | 0 | 20 | 20 | \$16,943 | \$25,373 | \$29,588 |

Job Printers

51-5021 | Arts, AV Technology & Communications | Conventional | Declining Growth |

MEDIUM SKILL

Alternate Job Title(s): Job Press Operator; Apprentice Job Printer

Occupational Description

Set type according to copy; operate press to print job order; and read proof for errors and clarity of impression, and correct imperfections. Job printers are often found in small establishments where work combines several job skills.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine proofs or printed sheets in order to detect errors and to evaluate the adequacy of impression clarity.

Fill ink fountains and move levers to adjust the flow of ink.

Set feed guides according to sizes and thicknesses of paper.

Operate cylinder or automatic platen presses to print job orders.

Clean ink rollers after runs are completed.

Top Work Activities

Getting Information

Controlling Machines and Processes

Handling and Moving Objects

Top Skills

Operation Monitoring

Quality Control Analysis

Monitoring

Top Knowledge

Production and Processing

Mechanical

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 157 | 142 | -9.55 | 0 | 6 | 6 | \$19,058 | \$32,673 | \$39,480 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Prepress Technicians and Workers

51-5022 | Arts, A/V Technology & Communications | Realistic | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Composer; Lithographer; Photoengraving Etcher

Occupational Description

Set up and prepare material for printing presses. Include prepress functions, such as compositing, typesetting, layout, paste-up, camera operating, scanning, film stripping, and photoengraving.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Enter, store, and retrieve information on computer-aided equipment.

Enter, position, and alter text size, using computers, to make up and arrange pages so that printed materials can be produced.

Maintain, adjust, and clean equipment, and perform minor repairs.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Getting Information

Making Decisions and Solving Problems

Top Skills

Time Management

Active Listening

Complex Problem Solving

Top Knowledge

Computers and Electronics

English Language

Communications and Media

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 154 | 124 | -19.48 | 0 | 19 | 19 | \$15,850 | \$25,047 | \$29,646 |

Printing Machine Operators

51-5023 | Arts, A/V Technology & Communications | Realistic | Below Average Growth

SOME SKILL

Alternate Job Title(s): Bag Printer; Offset Press Operator; Lithoplate Maker

Occupational Description

Set up or operate various types of printing machines, such as offset, letterset, intaglio, or gravure presses or screen printers to produce print on paper or other materials.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect and examine printed products for print clarity, color accuracy, conformance to specifications, and external defects.

Push buttons, turn handles or move controls and levers to start and control printing machines.

Reposition printing plates, adjust pressure rolls, or otherwise adjust machines to improve print quality, using knobs, handwheels, or hand tools.

Set and adjust speed, temperature, ink flow, and positions and pressure tolerances of equipment.

Examine job orders to determine details such as quantities to be printed, production times, stock specifications, colors, and color sequences.

Top Work Activities

Controlling Machines and Processes

Getting Information

Handling and Moving Objects

Top Skills

Operation Monitoring

Operation and Control

Quality Control Analysis

Top Knowledge

Mechanical

Production and Processing

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 241 | 252 | 4.56 | 11 | 50 | 61 | \$22,082 | \$33,332 | \$38,957 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Laundry and Dry-Cleaning Workers

51-6011 | Marketing, Sales, Service & Tourism

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Laundry Carpet Cleaner; Silk Spotter; Washing Machine Operator

Occupational Description

Operate or tend washing or dry-cleaning machines to wash or dry-clean industrial or household articles, such as cloth garments, suede, leather, furs, blankets, draperies, fine linens, rugs, and carpets. Include spotters and dyers of these articles.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Receive and mark articles for laundry or dry cleaning with identifying code numbers or names, using hand or machine markers.

Start washers, dry cleaners, driers, or extractors, and turn valves or levers to regulate machine processes and the volume of soap, detergent, water, bleach, starch, and other additives.

Sort and count articles removed from dryers, and fold, wrap, or hang them.

Examine and sort into lots articles to be cleaned, according to color, fabric, dirt content, and cleaning technique required.

Load articles into washers or dry-cleaning machines, or direct other workers to perform loading.

Top Work Activities

Getting Information

Performing General Physical Activities

Controlling Machines and Processes

Top Skills

Active Listening

Critical Thinking

Monitoring

Top Knowledge

Customer and Personal Service

English Language

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 811 | 790 | -2.59 | 0 | 141 | 141 | \$16,433 | \$20,095 | \$21,926 |

Sewing Machine Operators

51-6031 | Manufacturing

Realistic

Declining Growth

LOW SKILL

Alternate Job Title(s): Blind Stitch Machine Operator; Loop Tacker; Hemmer

Occupational Description

Operate or tend sewing machines to join, reinforce, decorate, or perform related sewing operations in the manufacture of garment or nongarment products.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor machine operation to detect problems such as defective stitching, breaks in thread, or machine malfunctions.

Position items under needles, using marks on machines, clamps, templates, or cloth as guides.

Place spools of thread, cord, or other materials on spindles, insert bobbins, and thread ends through machine guides and components.

Match cloth pieces in correct sequences prior to sewing them, and verify that dye lots and patterns match.

Guide garments or garment parts under machine needles and presser feet to sew parts together.

Top Work Activities

Getting Information

Controlling Machines and Processes

Handling and Moving Objects

Top Skills

Monitoring

Critical Thinking

Time Management

Top Knowledge

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 196 | 192 | -2.04 | 0 | 11 | 11 | \$18,597 | \$22,617 | \$24,627 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Tailors, Dressmakers, and Custom Sewers

51-6052 | Marketing, Sales, Service & Tourism | Realistic | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): Coat Maker; Hand Finisher, Except Toys; Shop Tailor

Occupational Description

Design, make, alter, repair, or fit garments.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Fit and study garments on customers to determine required alterations.

Sew garments, using needles and thread or sewing machines.

Measure parts such as sleeves or pant legs, and mark or pin-fold alteration lines.

Take up or let down hems to shorten or lengthen garment parts such as sleeves.

Let out or take in seams in suits and other garments to improve fit.

Top Work Activities

Controlling Machines and Processes

Getting Information

Identifying Objects, Actions, and Events

Top Skills

Active Listening

Critical Thinking

Time Management

Top Knowledge

Customer and Personal Service

Design

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 136 | 137 | 0.74 | 1 | 14 | 15 | \$19,270 | \$24,100 | \$26,516 |

Upholsterers

51-6093 | Manufacturing | Realistic | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Car Seat Maker; Casket Coverer; Auto Top Mechanic

Occupational Description

Make, repair, or replace upholstery for household furniture or transportation vehicles.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Fit, install, and secure material on frames, using hand tools, power tools, glue, cement, and/or staples.

Build furniture up with loose fiber stuffing, cotton, felt, and/or foam padding to form smooth rounded surfaces.

Examine furniture frames, upholstery, springs, and webbing to locate defects.

Attach fasteners, grommets, buttons, buckles, ornamental trim, and other accessories to covers or frames, using hand tools.

Remove covering, webbing, padding, and/or defective springs from workpieces, using hand tools such as hammers and tack pullers.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Critical Thinking

Active Learning

Operation Monitoring

Top Knowledge

Customer and Personal Service

English Language

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 67 | 72 | 7.46 | 5 | 4 | 9 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cabinetmakers and Bench Carpenters

51-7011 | Manufacturing

Realistic

Avg to Above Avg Growth

MEDIUM SKILL

Alternate Job Title(s): Marquetry Worker; Antique Furniture Repairer; Wood Machinist

Occupational Description

Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products. Exclude "Woodworking Machine Setters, Operators, and Tenders" (51-7041 through 51-7042) who specialize in one or a limited number of machine phases.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Produce and assemble components of articles such as store fixtures, office equipment, cabinets, and high-grade furniture.

Verify dimensions, and check the quality and fit of pieces in order to ensure adherence to specifications.

Set up and operate machines, including power saws, jointers, mortisers, tenoners, molders, and shapers, to cut, mold, and shape woodstock and wood substitutes.

Measure and mark dimensions of parts on paper or lumber stock prior to cutting, following blueprints, to ensure a tight fit and quality product.

Reinforce joints with nails or other fasteners to prepare articles for finishing.

Top Work Activities

Getting Information

Controlling Machines and Processes

Handling and Moving Objects

Top Skills

Operation Monitoring

Monitoring

Quality Control Analysis

Top Knowledge

Design

Mechanical

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 407 | 450 | 10.57 | 43 | 92 | 135 | \$24,265 | \$32,216 | \$36,191 |

Woodworking Machine Setters, Operators, and Tenders, Except Sawing

51-7042 | Manufacturing

Realistic

Exceptional Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Frazer; Molding Sander

Occupational Description

Set up, operate, or tend woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, and wood nailing machines.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Start machines, adjust controls, and make trial cuts to ensure that machinery is operating properly.

Determine product specifications and materials, work methods, and machine setup requirements, according to blueprints, oral or written instructions, drawings, or work orders.

Feed stock through feed mechanisms or conveyors into planing, shaping, boring, mortising, or sanding machines to produce desired components.

Adjust machine tables or cutting devices and set controls on machines to produce specified cuts or operations.

Monitor operation of machines, and make adjustments to correct problems and ensure conformance to specifications.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Getting Information

Top Skills

Operation Monitoring

Active Listening

Speaking

Top Knowledge

Production and Processing

Mathematics

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|-------|----------------|-------------|
| 582 | 750 | 28.87 | 168 | 119 | 287 | N/A | N/A | N/A |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Stationary Engineers and Boiler Operators

51-8021 | Natural Resources & Mining

Realistic

High Growth

MEDIUM SKILL

Alternate Job Title(s): Cooling System Operator; Low Pressure Firer; Steam Engineer

Occupational Description

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.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate or tend stationary engines, boilers, and auxiliary equipment such as pumps, compressors, and air-conditioning equipment, to supply and maintain steam or heat for buildings, marine vessels, or pneumatic tools.

Observe and interpret readings on gauges, meters, and charts registering various aspects of boiler operation to ensure that boilers are operating properly.

Test boiler water quality or arrange for testing and take necessary corrective action, such as adding chemicals to prevent corrosion and harmful deposits.

Activate valves to maintain required amounts of water in boilers, to adjust supplies of combustion air, and to control the flow of fuel into burners.

Monitor boiler water, chemical, and fuel levels, and make adjustments to maintain required levels.

Top Work Activities

Repairing and Maintaining Mechanical Equipment

Inspecting Equipment, Structures, or Material

Monitor Processes, Materials, or Surroundings

Top Skills

Operation Monitoring

Active Listening

Speaking

Top Knowledge

Mechanical

Engineering and Technology

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|-----------------|-------------|
| 161 | 181 | 12.42 | 20 | 47 | \$31,390 | \$44,942 | \$51,718 |

Water and Liquid Waste Treatment Plant and System Operators

51-8031 | Natural Resources & Mining

Realistic

Exceptional Growth

HIGH DEMAND**MEDIUM SKILL**

Alternate Job Title(s): Disposal Operator; Filtration Plant Operator; Sewage Plant Operator

Occupational Description

Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or liquid waste.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Add chemicals such as ammonia, chlorine, or lime to disinfect and deodorize water and other liquids.

Inspect equipment or monitor operating conditions, meters, and gauges to determine load requirements and detect malfunctions.

Collect and test water and sewage samples, using test equipment and color analysis standards.

Record operational data, personnel attendance, or meter and gauge readings on specified forms.

Operate and adjust controls on equipment to purify and clarify water, process or dispose of sewage, and generate power.

Top Work Activities

Monitor Processes, Materials, or Surroundings

Evaluating Information to Determine Compliance with Standards

Identifying Objects, Actions, and Events

Top Skills

Operation Monitoring

Operation and Control

Monitoring

Top Knowledge

Mechanical

Mathematics

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|-----------------|-------------|
| 471 | 583 | 23.78 | 112 | 213 | \$27,186 | \$39,371 | \$45,463 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Petroleum Pump System Operators, Refinery Operators, and Gaugers

51-8093 | Manufacturing

Realistic

Exceptional Growth

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Absorption Plant Operator; Gasoline Plant Operator; Oil Refiner

Occupational Description

Control the operation of petroleum refining or processing units. May specialize in controlling manifold and pumping systems, gauging or testing oil in storage tanks, or regulating the flow of oil into pipelines.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor process indicators, instruments, gauges, and meters in order to detect and report any possible problems.

Start pumps and open valves or use automated equipment to regulate the flow of oil in pipelines and into and out of tanks.

Control or operate manifold and pumping systems to circulate liquids through a petroleum refinery.

Operate control panels to coordinate and regulate process variables such as temperature and pressure, and to direct product flow rate, according to process schedules.

Signal other workers by telephone or radio to operate pumps, open and close valves, and check temperatures.

Top Work Activities

Monitor Processes, Materials, or Surroundings

Identifying Objects, Actions, and Events

Controlling Machines and Processes

Top Skills

Operation Monitoring

Monitoring

Reading Comprehension

Top Knowledge

Mechanical

Mathematics

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 120 | 159 | 32.50 | 39 | 28 | 67 | \$45,277 | \$57,290 | \$63,297 |

Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders

51-9012 | Manufacturing

Realistic

Very High Growth

SOME SKILL

Alternate Job Title(s): Brewmaster; Dairy Processing Equipment Operator; Distiller

Occupational Description

Set up, operate, or tend continuous flow or vat-type equipment; filter presses; shaker screens; centrifuges; condenser tubes; precipitating, fermenting, or evaporating tanks; scrubbing towers; or batch stills. These machines extract, sort, or separate liquids, gases, or solids from other materials to recover a refined product. Include dairy processing equipment operators. Exclude "Chemical Equipment Operators and Tenders" (51-9011).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Set or adjust machine controls to regulate conditions such as material flow, temperature, and pressure.

Monitor material flow and instruments such as temperature and pressure gauges, indicators, and meters, in order to ensure optimal processing conditions.

Start agitators, shakers, conveyors, pumps, or centrifuge machines, then turn valves or move controls to admit, drain, separate, filter, clarify, mix, or transfer materials.

Examine samples visually or by hand to verify qualities such as clarity, cleanliness, consistency, dryness, and texture.

Collect samples of materials or products for laboratory analysis.

Top Work Activities

Controlling Machines and Processes

Monitor Processes, Materials, or Surroundings

Inspecting Equipment, Structures, or Material

Top Skills

Operation Monitoring

Monitoring

Operation and Control

Top Knowledge

Production and Processing

Chemistry

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 156 | 180 | 15.38 | 24 | 13 | 37 | \$24,319 | \$33,517 | \$38,116 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders

51-9021 | Manufacturing

Realistic

Below Average Growth

SOME SKILL

Alternate Job Title(s): Beveling and Edging Machine Operator; Pulverizer Operator; Sand Blast Operator, Except Construction

Occupational Description

Set up, operate, or tend machines to crush, grind, or polish materials, such as coal, glass, grain, stone, food, or rubber.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read work orders to determine production specifications and information.

Observe operation of equipment to ensure continuity of flow, safety, and efficient operation, and to detect malfunctions.

Move controls to start, stop, or adjust machinery and equipment that crushes, grinds, polishes, or blends materials.

Record data from operations, testing, and production on specified forms.

Examine materials, ingredients, or products visually or with hands, in order to ensure conformance to established standards.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Controlling Machines and Processes

Top Skills

Operation Monitoring

Operation and Control

Monitoring

Top Knowledge

Mechanical

Production and Processing

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 440 | 441 | 0.23 | 1 | 75 | 76 | \$25,858 | \$33,873 | \$37,880 |

Mixing and Blending Machine Setters, Operators, and Tenders

51-9023 | Manufacturing

Realistic

Exceptional Growth

SOME SKILL

Alternate Job Title(s): Batch Maker; Clay Mixer; Tumbler Tender

Occupational Description

Set up, operate, or tend machines to mix or blend materials, such as chemicals, tobacco, liquids, color pigments, or explosive ingredients. Exclude "Food Batchmakers" (51-3092).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Weigh or measure materials, ingredients, and products to ensure conformance to requirements.

Test samples of materials or products to ensure compliance with specifications, using test equipment.

Start machines to mix or blend ingredients; then allow them to mix for specified times.

Operate or tend machines to mix or blend any of a wide variety of materials such as spices, dough batter, tobacco, fruit juices, chemicals, livestock feed, food products, color pigments, or explosive ingredients.

Dump or pour specified amounts of materials into machinery and equipment.

Top Work Activities

Inspecting Equipment, Structures, or Material

Controlling Machines and Processes

Documenting and Recording Information

Top Skills

Operation Monitoring

Operation and Control

Monitoring

Top Knowledge

Production and Processing

Mathematics

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 134 | 161 | 20.15 | 27 | 23 | 50 | \$25,415 | \$31,372 | \$34,351 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cutting and Slicing Machine Setters, Operators, and Tenders

51-9032 | Manufacturing | Realistic | High Growth

SOME SKILL

Alternate Job Title(s): Bias Machine Operator; Shear Operator; Slate Trimmer

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices such as rulers, micrometers, or scales.

Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material.

Stack and sort cut material for packaging, further processing, or shipping, according to types and sizes of material.

Review work orders, blueprints, specifications, or job samples to determine components, settings, and adjustments for cutting and slicing machines.

Type instructions on computer keyboards, push buttons to activate computer programs, or manually set cutting guides, clamps, and knives.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Performing General Physical Activities

Top Skills

Operation Monitoring

Operation and Control

Quality Control Analysis

Top Knowledge

Production and Processing

Public Safety and Security

Mechanical

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 167 | 187 | 11.98 | 20 | 56 | \$20,296 | \$26,793 | \$30,042 |

Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders

51-9041 | Manufacturing | Realistic | Exceptional Growth

SOME SKILL

Alternate Job Title(s): Briquette Maker; Cigarette Machine Operator; Rubber Laminating Machine Operator

Occupational Description

Set up, operate, or tend machines, such as glass forming machines, plodder machines, and tuber machines, to shape and form products, such as glassware, food, rubber, soap, brick, tile, clay, wax, tobacco, or cosmetics. Exclude "Paper Goods Machine Setters, Operators, and Tenders" (51-9196) and "Shoe Machine Operators and Tenders" (51-6042).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adjust machine components to regulate speeds, pressures, and temperatures, and amounts, dimensions, and flow of materials or ingredients.

Examine, measure, and weigh materials or products to verify conformance to standards, using measuring devices such as templates, micrometers, or scales.

Monitor machine operations and observe lights and gauges in order to detect malfunctions.

Press control buttons to activate machinery and equipment.

Turn controls to adjust machine functions, such as regulating air pressure, creating vacuums, and adjusting coolant flow.

Top Work Activities

Controlling Machines and Processes

Identifying Objects, Actions, and Events

Handling and Moving Objects

Top Skills

Operation Monitoring

Operation and Control

Monitoring

Top Knowledge

Production and Processing

Mechanical

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 83 | 114 | 37.35 | 31 | 48 | \$28,074 | \$29,276 | \$29,877 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders

51-9051 | Manufacturing | Realistic | Declining Growth |

SOME SKILL

Alternate Job Title(s): Brick Baker; Stoker; Tunnel Kiln Operator

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Weigh or measure specified amounts of ingredients or materials for processing, using devices such as scales and calipers.

Press and adjust controls in order to activate, set, and regulate equipment according to specifications.

Monitor equipment operation, gauges, and panel lights in order to detect deviations from standards.

Read and interpret work orders and instructions in order to determine work assignments, process specifications, and production schedules.

Record gauge readings, test results, and shift production in log books.

Top Work Activities

Controlling Machines and Processes

Performing General Physical Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Operation Monitoring

Operation and Control

Monitoring

Top Knowledge

Production and Processing

Mechanical

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 108 | 107 | -0.93 | 0 | 11 | 11 | \$29,691 | \$39,115 | \$43,826 |

Inspectors, Testers, Sorters, Samplers, and Weighers

51-9061 | Manufacturing | Conventional | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Bearing Inspector; Quality Checker; Testing and Regulating Technician

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Discard or reject products, materials, and equipment not meeting specifications.

Analyze and interpret blueprints, data, manuals, and other materials to determine specifications, inspection and testing procedures, adjustment and certification methods, formulas, and measuring instruments required.

Inspect, test, or measure materials, products, installations, and work for conformance to specifications.

Notify supervisors and other personnel of production problems, and assist in identifying and correcting these problems.

Discuss inspection results with those responsible for products, and recommend necessary corrective actions.

Top Work Activities

Documenting and Recording Information

Getting Information

Monitor Processes, Materials, or Surroundings

Top Skills

Critical Thinking

Active Listening

Speaking

Top Knowledge

Production and Processing

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 609 | 645 | 5.91 | 36 | 102 | 138 | \$24,270 | \$35,699 | \$41,414 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Jewelers and Precious Stone and Metal Workers

51-9071 | Marketing, Sales, Service & Tourism | Realistic | Declining Growth

MEDIUM SKILL

Alternate Job Title(s): Diamond Expert; Gemologist; Goldsmith

Occupational Description

Design, fabricate, adjust, repair, or appraise jewelry, gold, silver, other precious metals, or gems. Include diamond polishers and gem cutters and persons who perform precision casting and modeling of molds, casting metal in molds, or setting precious and semi-precious stones for jewelry and related products.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Smooth soldered joints and rough spots, using hand files and emery paper, and polish smoothed areas with polishing wheels or buffing wire.

Position stones and metal pieces, and set, mount, and secure items in place, using setting and hand tools.

Create jewelry from materials such as gold, silver, platinum, and precious or semiprecious stones.

Make repairs, such as enlarging or reducing ring sizes, soldering pieces of jewelry together, and replacing broken clasps and mountings.

Clean and polish metal items and jewelry pieces, using jewelers' tools, polishing wheels, and chemical baths.

Top Work Activities

Thinking Creatively

Organizing, Planning, and Prioritizing Work

Getting Information

Top Skills

Operations Analysis

Judgment and Decision Making

Critical Thinking

Top Knowledge

Customer and Personal Service

Design

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 133 | 129 | -3.01 | 0 | 27 | 27 | \$24,798 | \$34,525 | \$39,389 |

Dental Laboratory Technicians

51-9081 | Manufacturing | Realistic | Below Average Growth

SOME SKILL

Alternate Job Title(s): Ceramist; Crown and Bridge Technician; Orthodontic Technician

Occupational Description

Construct and repair full or partial dentures or dental appliances. Exclude "Dental Assistants" (31-9091).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Read prescriptions or specifications, and examine models and impressions, to determine the design of dental products to be constructed.

Fabricate, alter, and repair dental devices such as dentures, crowns, bridges, inlays, and appliances for straightening teeth.

Remove excess metal or porcelain, and polish surfaces of prostheses or frameworks, using polishing machines.

Melt metals or mix plaster, porcelain, or acrylic pastes, and pour materials into molds or over frameworks to form dental prostheses or apparatus.

Test appliances for conformance to specifications and accuracy of occlusion, using articulators and micrometers.

Top Work Activities

Getting Information

Identifying Objects, Actions, and Events

Controlling Machines and Processes

Top Skills

Time Management

Critical Thinking

Reading Comprehension

Top Knowledge

English Language

Production and Processing

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 184 | 193 | 4.89 | 9 | 36 | 45 | \$24,231 | \$30,046 | \$32,954 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Ophthalmic Laboratory Technicians

51-9083 | Manufacturing

Realistic

Avg to Above Avg Growth

SOME SKILL

Alternate Job Title(s): Eyeglass Maker; Lens Grinder; Spectacle Truer

Occupational Description

Cut, grind, and polish eyeglasses, contact lenses, or other precision optical elements. Assemble and mount lenses into frames or process other optical elements. Include precision lens polishers or grinders, centerer-edgers, and lens mounters. Exclude "Opticians, Dispensing" (29-2081).

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Adjust lenses and frames in order to correct alignment.

Mount, secure, and align finished lenses in frames or optical assemblies, using precision hand tools.

Mount and secure lens blanks or optical lenses in holding tools or chucks of cutting, polishing, grinding, or coating machines.

Shape lenses appropriately so that they can be inserted into frames.

Assemble eyeglass frames and attach shields, nose pads, and temple pieces, using pliers, screwdrivers, and drills.

Top Work Activities

Inspecting Equipment, Structures, or Material

Getting Information

Making Decisions and Solving Problems

Top Skills

Monitoring

Operation Monitoring

Quality Control Analysis

Top Knowledge

Customer and Personal Service

Mathematics

Computers and Electronics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 73 | 80 | 9.59 | 7 | 14 | 21 | \$21,776 | \$30,996 | \$35,606 |

Packaging and Filling Machine Operators and Tenders

51-9111 | Manufacturing

Realistic

Below Average Growth

SOME SKILL

Alternate Job Title(s): Bottle Caser; Wrapper Layer; Strapping Machine Operator

Occupational Description

Operate or tend machines to prepare industrial or consumer products for storage or shipment. Include cannery workers who pack food products.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Sort, grade, weigh, and inspect products, verifying and adjusting product weight or measurement to meet specifications.

Observe machine operations to ensure quality and conformity of filled or packaged products to standards.

Monitor the production line, watching for problems such as pile-ups, jams, or glue that isn't sticking properly.

Attach identification labels to finished packaged items, or cut stencils and stencil information on containers, such as lot numbers or shipping destinations.

Stock and sort product for packaging or filling machine operation, and replenish packaging supplies, such as wrapping paper, plastic sheet, boxes, cartons, glue, ink, or labels.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Inspecting Equipment, Structures, or Material

Top Skills

Monitoring

Operation Monitoring

Active Listening

Top Knowledge

Production and Processing

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 692 | 695 | 0.43 | 3 | 116 | 119 | \$17,006 | \$23,681 | \$27,019 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Coating, Painting, and Spraying Machine Setters, Operators, and Tenders

51-9121 | Manufacturing

Realistic

| Avg to Above Avg Growth |

SOME SKILL

Alternate Job Title(s): Electrostatic Paint Operator; Silvering Applicator; Supercalender Operator

Occupational Description

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

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Observe machine gauges and equipment operation to detect defects or deviations from standards, and make adjustments as necessary.

Determine paint flow, viscosity, and coating quality by performing visual inspections, or by using viscometers.

Weigh or measure chemicals, coatings, or paints before adding them to machines.

Select appropriate coatings, paints, or sprays, or prepare them by mixing substances according to formulas, using automated paint mixing equipment.

Set up and operate machines to paint or coat products with such materials as silver and copper solution, rubber, paint, glaze, oil, or rustproofing materials.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Getting Information

Top Skills

Operation Monitoring

Quality Control Analysis

Operation and Control

Top Knowledge

Production and Processing

Mechanical

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Average [Mean] | Entry | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------------|----------|-------------|
| 291 | 323 | 11.00 | 32 | 76 | \$31,649 | \$24,138 | \$35,404 |

Painters, Transportation Equipment

51-9122 | Manufacturing

Realistic

| Below Average Growth |

SOME SKILL

Alternate Job Title(s): Auto Painter; Rust Proofer

Occupational Description

Operate or tend painting machines to paint surfaces of transportation equipment, such as automobiles, buses, trucks, trains, boats, and airplanes. Include painters in auto body repair facilities.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Dispose of hazardous waste in an appropriate manner.

Select paint according to company requirements, and match colors of paint following specified color charts.

Mix paints to match color specifications or vehicles' original colors, then stir and thin the paints, using spatulas or power mixing equipment.

Remove grease, dirt, paint, and rust from vehicle surfaces in preparation for paint application, using abrasives, solvents, brushes, blowtorches, washing tanks, or sandblasters.

Pour paint into spray guns and adjust nozzles and paint mixes for proper paint flow and coating thickness.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Monitoring

Operation and Control

Active Listening

Top Knowledge

Chemistry

Mechanical

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Average [Mean] | Entry | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|-----------------|----------|-------------|
| 119 | 125 | 5.04 | 6 | 31 | \$36,140 | \$30,176 | \$39,122 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Painting, Coating, and Decorating Workers

51-9123 | Manufacturing

Realistic

Below Average Growth

SOME SKILL

Alternate Job Title(s): Stenciler; Candy Dipper; Mirror Silverer

Occupational Description

Paint, coat, or decorate articles, such as furniture, glass, plateware, pottery, jewelry, cakes, toys, books, or leather. Exclude "Artists and Related Workers" (27-1011 through 27-1019), "Designers" (27-1021 through 27-1029), "Photographic Process Workers" (51-9131), and "Etchers and Engravers" (51-9194).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Apply coatings, such as paint, ink, or lacquer, to protect or decorate workpiece surfaces, using spray guns, pens, or brushes.

Examine finished surfaces of workpieces to verify conformance to specifications; then retouch any defective areas.

Clean and maintain tools and equipment, using solvents, brushes, and rags.

Read job orders and inspect workpieces to determine work procedures and materials required.

Clean surfaces of workpieces in preparation for coating, using cleaning fluids, solvents, brushes, scrapers, steam, sandpaper, or cloth.

Top Work Activities

Controlling Machines and Processes

Handling and Moving Objects

Inspecting Equipment, Structures, or Material

Top Skills

Critical Thinking

Monitoring

Active Listening

Top Knowledge

Production and Processing

Sales and Marketing

Design

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 70 | 76 | 8.57 | 6 | 18 | 24 | \$17,173 | \$24,845 | \$28,681 |

Photographic Processing Machine Operators

51-9132 | Manufacturing

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): Film Printer; Film Processor; Reproduction Machine Loader

Occupational Description

Operate photographic processing machines, such as photographic printing machines, film developing machines, and mounting presses.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Remove completed work from equipment.

Place film in labeled containers, or number film for identification, by hand or by using numbering machines.

Read work orders and examine negatives and film in order to determine machine settings and processing requirements.

Insert processed negatives and prints into envelopes so that they can be returned to customers.

Load circuit boards, racks or rolls of film, negatives, and/or printing paper into processing or printing machines.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Establishing and Maintaining Interpersonal Relationships

Top Skills

Operation Monitoring

Speaking

Monitoring

Top Knowledge

Customer and Personal Service

Production and Processing

Education and Training

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 115 | 81 | -29.57 | 0 | 28 | 28 | \$16,208 | \$19,515 | \$21,168 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Molders, Shapers, and Casters, Except Metal and Plastic

51-9195 | Manufacturing | Realistic | High Growth

SOME SKILL

Alternate Job Title(s): Cigar Roller; Glass Blower; Marble Finisher

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Brush or spray mold surfaces with parting agents, or insert paper into molds in order to ensure smoothness and prevent sticking or seepage.

Clean, finish, and lubricate molds and mold parts.

Separate models or patterns from molds, and examine products for accuracy.

Top Work Activities

Getting Information

Performing General Physical Activities

Inspecting Equipment, Structures, or Material

Top Skills

Operation Monitoring

Reading Comprehension

Critical Thinking

Top Knowledge

Production and Processing

Mechanical

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 120 | 134 | 11.67 | 14 | 59 | 73 | \$19,503 | \$30,117 | \$35,424 |

Helpers--Production Workers

51-9198 | Manufacturing | Realistic | Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Welder's Assistant; Tailor's Aide; Millwright's Helper

Occupational Description

Help production workers by performing duties of lesser skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment. Exclude apprentice workers and report them with the appropriate production occupation (51-1011 through 51-9199).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Operate machinery used in the production process, or assist machine operators.

Examine products to verify conformance to quality standards.

Observe equipment operations so that malfunctions can be detected, and notify operators of any malfunctions.

Lift raw materials, finished products, and packed items, manually or using hoists.

Count finished products to determine if product orders are complete.

Top Work Activities

Handling and Moving Objects

Performing General Physical Activities

Controlling Machines and Processes

Top Skills

Active Listening

Critical Thinking

Reading Comprehension

Top Knowledge

English Language

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,049 | 1,109 | 5.72 | 60 | 183 | 243 | \$18,684 | \$22,677 | \$24,674 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand

53-1021 | Transportation, Distribution & Logistics | Enterprising | Below Average Growth |

MEDIUM SKILL

Alternate Job Title(s): Cargo Supervisor; Yard Supervisor; Warehouse Supervisor

Occupational Description

Supervise and coordinate the activities of helpers, laborers, or material movers.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Plan work schedules and assign duties to maintain adequate staff for effective performance of activities and response to fluctuating workloads.

Collaborate with workers and managers to solve work-related problems.

Review work throughout the work process and at completion to ensure that it has been performed properly.

Transmit and explain work orders to laborers.

Check specifications of materials loaded or unloaded against information contained in work orders.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Making Decisions and Solving Problems

Getting Information

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Administration and Management

Customer and Personal Service

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 409 | 444 | 8.56 | 35 | 71 | 106 | \$30,806 | \$41,725 | \$47,185 |

First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators

53-1031 | Transportation, Distribution & Logistics | Enterprising | Below Average Growth |

HIGH WAGE

MEDIUM SKILL

Alternate Job Title(s): Dockmaster; Gas Station Manager; Roadmaster

Occupational Description

Directly supervise and coordinate activities of transportation and material-moving machine and vehicle operators and helpers.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Enforce safety rules and regulations.

Plan work assignments and equipment allocations to meet transportation, operations, or production goals.

Confer with customers, supervisors, contractors, and other personnel to exchange information and to resolve problems.

Direct workers in transportation or related services, such as pumping, moving, storing, and loading or unloading of materials or people.

Resolve worker problems or collaborate with employees to assist in problem resolution.

Top Work Activities

Communicating with Supervisors, Peers, or Subordinates

Interacting with Computers

Establishing and Maintaining Interpersonal Relationships

Top Skills

Active Listening

Management of Personnel Resources

Speaking

Top Knowledge

Transportation

Customer and Personal Service

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 708 | 728 | 2.82 | 20 | 123 | 143 | \$38,787 | \$54,250 | \$61,982 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Commercial Pilots

53-2012 | Transportation, Distribution & Logistics | Realistic | Very High Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): Crop Duster; Helicopter Pilot; Test Pilot

Occupational Description

Pilot and navigate the flight of small fixed or rotary winged aircraft, primarily for the transport of cargo and passengers. Requires Commercial Rating. Include aircraft instructors with similar certification.

Postsecondary vocational award is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Check aircraft prior to flights to ensure that the engines, controls, instruments, and other systems are functioning properly.
- Contact control towers for takeoff clearances, arrival instructions, and other information, using radio equipment.
- Start engines, operate controls, and pilot airplanes to transport passengers, mail, or freight according to flight plans, regulations, and procedures.
- Monitor engine operation, fuel consumption, and functioning of aircraft systems during flights.
- Consider airport altitudes, outside temperatures, plane weights, and wind speeds and directions to calculate the speed needed to become airborne.

Top Work Activities

- Operating Vehicles, Mechanized Devices, or Equipment
- Getting Information
- Monitor Processes, Materials, or Surroundings

Top Skills

- Operation and Control
- Operation Monitoring
- Critical Thinking

Top Knowledge

- Transportation
- Customer and Personal Service
- Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 205 | 235 | 14.63 | 30 | 70 | 100 | \$40,462 | \$57,462 | \$65,963 |

Air Traffic Controllers

53-2021 | Transportation, Distribution & Logistics | Enterprising | Below Average Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): Control Tower Operator; Flight Control Specialist; Flight Dispatcher

Occupational Description

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.

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Issue landing and take-off authorizations or instructions.
- Monitor or direct the movement of aircraft within an assigned air space or on the ground at airports to minimize delays and maximize safety.
- Monitor aircraft within a specific airspace, using radar, computer equipment, or visual references.
- Inform pilots about nearby planes or potentially hazardous conditions, such as weather, speed and direction of wind, or visibility problems.
- Provide flight path changes or directions to emergency landing fields for pilots traveling in bad weather or in emergency situations.

Top Work Activities

- Making Decisions and Solving Problems
- Identifying Objects, Actions, and Events
- Getting Information

Top Skills

- Active Listening
- Judgment and Decision Making
- Speaking

Top Knowledge

- Transportation
- Public Safety and Security
- Geography

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 90 | 90 | 0.00 | 0 | 31 | 31 | \$55,205 | \$79,559 | \$91,736 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Ambulance Drivers and Attendants, Except Emergency Medical Technicians

53-3011 | Transportation, Distribution & Logistics | Realistic | Below Average Growth |

SOME SKILL

Alternate Job Title(s): Patient Carrier

Occupational Description

Drive ambulance or assist ambulance driver in transporting sick, injured, or convalescent persons. Assist in lifting patients.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Drive ambulances or assist ambulance drivers in transporting sick, injured, or convalescent persons.

Remove and replace soiled linens and equipment to maintain sanitary conditions.

Place patients on stretchers and load stretchers into ambulances, usually with assistance from other attendants.

Accompany and assist emergency medical technicians on calls.

Earn and maintain appropriate certifications.

Top Work Activities

Assisting and Caring for Others

Operating Vehicles, Mechanized Devices, or Equipment

Getting Information

Top Skills

Active Listening

Critical Thinking

Service Orientation

Top Knowledge

Customer and Personal Service

Transportation

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 119 | 129 | 8.40 | 10 | 21 | 31 | \$15,824 | \$21,864 | \$24,884 |

Bus Drivers, Transit and Intercity

53-3021 | Transportation, Distribution & Logistics | Realistic | Very High Growth |

SOME SKILL

Alternate Job Title(s): Motor Coach Operator; Jitney Driver

Occupational Description

Drive bus or motor coach, including regular route operations, charters, and private carriage. May assist passengers with baggage. May collect fares or tickets.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Drive vehicles over specified routes or to specified destinations according to time schedules, complying with traffic regulations to ensure that passengers have a smooth and safe ride.

Park vehicles at loading areas so that passengers can board.

Inspect vehicles, and check gas, oil, and water levels prior to departure.

Advise passengers to be seated and orderly while on vehicles.

Assist passengers, such as elderly or disabled individuals, on and off bus, ensure they are seated properly, help carry baggage, and answer questions about bus schedules or routes.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Communicating with Supervisors, Peers, or Subordinates

Top Skills

Operation and Control

Operation Monitoring

Active Listening

Top Knowledge

Transportation

Public Safety and Security

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 266 | 303 | 13.91 | 37 | 46 | 83 | \$20,713 | \$26,720 | \$29,724 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Bus Drivers, School

53-3022 | Transportation, Distribution & Logistics

Realistic

Declining Growth

SOME SKILL

Alternate Job Title(s): N/A

Occupational Description

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.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Follow safety rules as students board and exit buses or cross streets near bus stops.

Comply with traffic regulations to operate vehicles in a safe and courteous manner.

Check the condition of a vehicle's tires, brakes, windshield wipers, lights, oil, fuel, water, and safety equipment to ensure that everything is in working order.

Maintain order among pupils during trips to ensure safety.

Pick up and drop off students at regularly scheduled neighborhood locations, following strict time schedules.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Identifying Objects, Actions, and Events

Top Skills

Active Listening

Social Perceptiveness

Operation Monitoring

Top Knowledge

Public Safety and Security

Transportation

Psychology

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 1,707 | 1,704 | -0.18 | 0 | 298 | 298 | \$19,756 | \$30,681 | \$36,143 |

Truck Drivers, Heavy and Tractor-Trailer

53-3032 | Transportation, Distribution & Logistics

Realistic

Very High Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Auto Carrier Driver; Cement Truck Driver; Moving Van Driver

Occupational Description

Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 GVW, to transport and deliver goods, livestock, or materials in liquid, loose, or packaged form. May be required to unload truck. May require use of automated routing equipment. Requires commercial drivers' license.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Follow appropriate safety procedures for transporting dangerous goods.

Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order.

Maintain logs of working hours and of vehicle service and repair status, following applicable state and federal regulations.

Obtain receipts or signatures for delivered goods and collect payment for services when required.

Check all load-related documentation to ensure that it is complete and accurate.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Getting Information

Top Skills

Operation and Control

Operation Monitoring

Monitoring

Top Knowledge

Transportation

Public Safety and Security

English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement = Openings | Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|----------------|----------|----------------|-------------|
| 8,835 | 10,361 | 17.27 | 1,526 | 1,581 | 3,107 | \$26,463 | \$38,248 | \$44,140 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Truck Drivers, Light or Delivery Services

53-3033 | Transportation, Distribution & Logistics | Realistic | Below Average Growth | **HIGH DEMAND** | **SOME SKILL**

Alternate Job Title(s): Parcel Post Truck Driver

Occupational Description

Drive a truck or van with a capacity of under 26,000 GVW, primarily to deliver or pick up merchandise or to deliver packages within a specified area. May require use of automatic routing or location software. May load and unload truck. Exclude "Couriers and Messengers" (43-5021).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Obey traffic laws, and follow established traffic and transportation procedures.

Inspect and maintain vehicle supplies and equipment, such as gas, oil, water, tires, lights, and brakes, to ensure that vehicles are in proper working condition.

Report any mechanical problems encountered with vehicles.

Present bills and receipts and collect payments for goods delivered or loaded.

Load and unload trucks, vans, or automobiles.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Getting Information

Handling and Moving Objects

Top Skills

Active Listening

Speaking

Critical Thinking

Top Knowledge

Transportation

Customer and Personal Service

Administration and Management

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 2,775 | 3,010 | 8.47 | 235 | 496 | 731 | \$17,601 | \$27,797 | \$32,894 |

Taxi Drivers and Chauffeurs

53-3041 | Transportation, Distribution & Logistics | Realistic | Very High Growth | **HIGH DEMAND** | **LOW SKILL**

Alternate Job Title(s): Cab Driver; Courtesy Van Driver; Limousine Driver

Occupational Description

Drive automobiles, vans, or limousines to transport passengers. May occasionally carry cargo. Include hearse drivers. Exclude "Ambulance Drivers and Attendants, Except Emergency Medical Technicians" (53-3011) and "Bus Drivers" (53-3021 through 53-3022).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Follow relevant safety regulations and state laws governing vehicle operation and ensure that passengers follow safety regulations.

Test vehicle equipment such as lights, brakes, horns, or windshield wipers, to ensure proper operation.

Arrange to pick up particular customers or groups on a regular schedule.

Provide passengers with assistance entering and exiting vehicles, and help them with any luggage.

Notify dispatchers or company mechanics of vehicle problems.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Performing for or Working Directly with the Public

Getting Information

Top Skills

Active Listening

Service Orientation

Speaking

Top Knowledge

Customer and Personal Service

Transportation

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 776 | 915 | 17.91 | 139 | 138 | 277 | \$15,540 | \$19,195 | \$21,023 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Parking Lot Attendants

53-6021 | Marketing, Sales, Service & Tourism

Realistic

Declining Growth

LOW SKILL

Alternate Job Title(s): Car Hop; Car Runner; Valet Parker

Occupational Description

Park automobiles or issue tickets for customers in a parking lot or garage. May collect fee.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Take numbered tags from customers, locate vehicles, and deliver vehicles, or provide customers with instructions for locating vehicles.

Keep parking areas clean and orderly to ensure that space usage is maximized.

Direct motorists to parking areas or parking spaces, using hand signals or flashlights as necessary.

Patrol parking areas in order to prevent vehicle damage and vehicle or property thefts.

Top Work Activities

Performing for or Working Directly with the Public

Handling and Moving Objects

Performing General Physical Activities

Top Skills

Speaking

Social Perceptiveness

Service Orientation

Top Knowledge

Customer and Personal Service

English Language

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 116 | 112 | -3.45 | 0 | 42 | 42 | \$15,431 | \$19,478 | \$21,501 |

Service Station Attendants

53-6031 | Marketing, Sales, Service & Tourism

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Filling Station Attendant; Gas and Oil Servicer; Pump Attendant

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Collect cash payments from customers and make change, or charge purchases to customers' credit cards and provide customers with receipts.

Activate fuel pumps and fill fuel tanks of vehicles with gasoline or diesel fuel to specified levels.

Prepare daily reports of fuel, oil, and accessory sales.

Clean parking areas, offices, restrooms, and equipment and remove trash.

Check air pressure in vehicle tires; and levels of fuel, motor oil, transmission, radiator, battery, and other fluids; and add air, oil, water, or other fluids, as required.

Top Work Activities

Performing for or Working Directly with the Public

Controlling Machines and Processes

Performing General Physical Activities

Top Skills

Active Listening

Speaking

Service Orientation

Top Knowledge

Customer and Personal Service

Mathematics

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 580 | 586 | 1.03 | 6 | 241 | 247 | \$16,252 | \$20,920 | \$23,254 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Transportation Inspectors

53-6051 | Transportation, Distribution & Logistics | Realistic | Below Average Growth

HIGH WAGE **MEDIUM SKILL**

Alternate Job Title(s): Airplane Inspector; Motor Vehicle Examiner; Safety Agent

Occupational Description

Inspect equipment or goods in connection with the safe transport of cargo or people. Include rail transport inspectors, such as freight inspectors, car inspectors, rail inspectors, and other nonprecision inspectors of other types of transportation vehicles.

Work experience in a related occupation is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Inspect vehicles or other equipment for evidence of abuse, damage, or mechanical malfunction.
- Inspect vehicles or equipment to ensure compliance with rules, standards, or regulations.
- Examine transportation vehicles, equipment, or systems to detect damage, wear, or malfunction.
- Conduct vehicle or transportation equipment tests, using diagnostic equipment.
- Inspect repairs to transportation vehicles or equipment to ensure that repair work was performed properly.

Top Work Activities

- Inspecting Equipment, Structures, or Material
- Operating Vehicles, Mechanized Devices, or Equipment
- Handling and Moving Objects

Top Skills

- Active Listening
- Operation Monitoring
- Quality Control Analysis

Top Knowledge

- Mechanical
- Transportation
- Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 106 | 111 | 4.72 | 5 | 25 | 30 | \$39,089 | \$65,995 | \$79,449 |

Conveyor Operators and Tenders

53-7011 | Manufacturing | Realistic | Declining Growth

LOW SKILL

Alternate Job Title(s): Belt Tender; Grain Elevator Operator

Occupational Description

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.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

- Position deflector bars, gates, chutes, or spouts to divert flow of materials from one conveyor onto another conveyor.
- Weigh or measure materials and products, using scales or other measuring instruments, or read scales on conveyors that continually weigh products, in order to verify specified tonnages and prevent overloads.
- Manipulate controls, levers, and valves to start pumps, auxiliary equipment, or conveyors, and to adjust equipment positions, speeds, timing, and material flows.
- Record production data such as weights, types, quantities, and storage locations of materials, as well as equipment performance problems and downtime.
- Inform supervisors of equipment malfunctions that need to be addressed.

Top Work Activities

- Handling and Moving Objects
- Communicating with Supervisors, Peers, or Subordinates
- Monitor Processes, Materials, or Surroundings

Top Skills

- Operation Monitoring
- Operation and Control
- Monitoring

Top Knowledge

- Mechanical
- Computers and Electronics
- English Language

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 751 | 710 | -5.46 | 0 | 219 | 219 | \$23,977 | \$31,549 | \$35,336 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Crane and Tower Operators

53-7021 | Architecture & Construction | Realistic | Below Average Growth

HIGH WAGE | **MEDIUM SKILL**

Alternate Job Title(s): Boomsling Operator; Cherry Picker Operator; Scrap Drop Operator

Occupational Description

Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions. Exclude "Excavating and Loading Machine and Dragline Operators" (53-7032).

Long-term, on-the-job training (> 12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Determine load weights and check them against lifting capacities to prevent overload.

Move levers, depress foot pedals, or turn dials to operate cranes, cherry pickers, electromagnets, or other moving equipment for lifting, moving, or placing loads.

Inspect cables or grappling devices for wear and install or replace cables, as needed.

Clean, lubricate, and maintain mechanisms such as cables, pulleys, or grappling devices, making repairs as necessary.

Inspect and adjust crane mechanisms or lifting accessories to prevent malfunctions or damage.

Top Work Activities

Controlling Machines and Processes

Inspecting Equipment, Structures, or Material

Handling and Moving Objects

Top Skills

Operation and Control

Operation Monitoring

Monitoring

Top Knowledge

Mechanical

Education and Training

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|-----------------|-------------|
| 176 | 180 | 2.27 | 4 | 41 | 45 | \$31,590 | \$45,150 | \$51,930 |

Industrial Truck and Tractor Operators

53-7051 | Transportation, Distribution & Logistics | Realistic | Below Average Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Fork Lift Driver; Skidder Operator; Stacker Operator

Occupational Description

Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location. Exclude "Logging Equipment Operators" (45-4022).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect product load for accuracy, and safely move it around the warehouse or facility to ensure timely and complete delivery.

Move controls to drive gasoline- or electric-powered trucks, cars, or tractors and transport materials between loading, processing, and storage areas.

Move levers and controls that operate lifting devices, such as forklifts, lift beams and swivel-hooks, hoists, and elevating platforms, to load, unload, transport, and stack material.

Position lifting devices under, over, or around loaded pallets, skids, and boxes, and secure material or products for transport to designated areas.

Manually or mechanically load and unload materials from pallets, skids, platforms, cars, lifting devices, or other transport vehicles.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Handling and Moving Objects

Getting Information

Top Skills

Operation Monitoring

Operation and Control

Coordination

Top Knowledge

Production and Processing

Mathematics

Customer and Personal Service

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 694 | 741 | 6.77 | 47 | 207 | 254 | \$24,474 | \$33,310 | \$37,728 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Cleaners of Vehicles and Equipment

53-7061 | Transportation, Distribution & Logistics

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Barrel Washer; Auto Detailer; Machine Cleaner

Occupational Description

Wash or otherwise clean vehicles, machinery, and other equipment. Use such materials as water, cleaning agents, brushes, cloths, and hoses. Exclude "Janitors and Cleaners, Except Maids and Housekeeping Cleaners" (37-2011).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect parts, equipment, and vehicles for cleanliness, damage, and compliance with standards or regulations.

Scrub, scrape, or spray machine parts, equipment, or vehicles, using scrapers, brushes, clothes, cleaners, disinfectants, insecticides, acid, abrasives, vacuums, and hoses.

Mix cleaning solutions, abrasive compositions, and other compounds, according to formulas.

Press buttons to activate cleaning equipment or machines.

Clean and polish vehicle windows.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Controlling Machines and Processes

Top Skills

Operation and Control

Operation Monitoring

Quality Control Analysis

Top Knowledge

Public Safety and Security

Customer and Personal Service

Transportation

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 1,034 | 1,046 | 1.16 | 12 | 368 | 380 | \$15,376 | \$19,357 | \$21,347 |

Laborers and Freight, Stock, and Material Movers, Hand

53-7062 | Transportation, Distribution & Logistics

Realistic

Below Average Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Cargo Handler; Stevedore; Truck Loader and Unloader

Occupational Description

Manually move freight, stock, or other materials or perform other unskilled general labor. Include all unskilled manual laborers not elsewhere classified. Exclude "Material Moving Workers" (53-7011 through 53-7199) who use power equipment. Exclude "Construction Laborers" (47-2061) and "Construction Trades Helpers" (47-3011 through 47-3019).

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Attach identifying tags to containers, or mark them with identifying information.

Read work orders or receive oral instructions to determine work assignments and material and equipment needs.

Record numbers of units handled and moved, using daily production sheets or work tickets.

Move freight, stock, and other materials to and from storage and production areas, loading docks, delivery vehicles, ships, and containers, by hand or using trucks, tractors, and other equipment.

Sort cargo before loading and unloading.

Top Work Activities

Performing General Physical Activities

Getting Information

Inspecting Equipment, Structures, or Material

Top Skills

Active Listening

Critical Thinking

Operation Monitoring

Top Knowledge

English Language

Public Safety and Security

Mathematics

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Openings | Replacement + Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------|------------------------|------------------|----------|----------------|-------------|
| 5,637 | 5,707 | 1.24 | 70 | 1,814 | 1,884 | \$17,696 | \$24,761 | \$28,293 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

Wellhead Pumpers

53-7073 | Natural Resources & Mining

Realistic

| Exceptional Growth

HIGH DEMAND

SOME SKILL

Alternate Job Title(s): Oil Well Service Operator

Occupational Description

Operate power pumps and auxiliary equipment to produce flow of oil or gas from wells in oil field.

Moderate-term, on-the-job training (1-12 months) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Monitor control panels during pumping operations in order to ensure that materials are being pumped at the correct pressure, density, rate, and concentration.

Operate engines and pumps in order to shut off wells according to production schedules, and to switch flow of oil into storage tanks.

Perform routine maintenance on vehicles and equipment.

Repair gas and oil meters and gauges.

Unload and assemble pipes and pumping equipment, using hand tools.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Controlling Machines and Processes

Top Skills

Operation Monitoring

Operation and Control

Critical Thinking

Top Knowledge

Mechanical

Mathematics

Production and Processing

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 230 | 333 | 44.78 | 103 | 170 | \$27,086 | \$44,253 | \$52,837 |

Refuse and Recyclable Material Collectors

53-7081 | Transportation, Distribution & Logistics

Realistic

| High Growth

HIGH DEMAND

LOW SKILL

Alternate Job Title(s): Garbage Collector; Scrap Metal Collector; Trash Collector

Occupational Description

Collect and dump refuse or recyclable materials from containers into truck. May drive truck.

Short-term, on-the-job training (< 30 days) is the most significant source of education or training needed to become fully qualified in this occupation.

Top Core Tasks

Inspect trucks prior to beginning routes to ensure safe operating condition.

Refuel trucks or add other fluids, such as oil or brake fluid.

Fill out defective equipment reports.

Drive to disposal sites to empty trucks that have been filled.

Drive trucks, following established routes, through residential streets or alleys or through business or industrial areas.

Top Work Activities

Operating Vehicles, Mechanized Devices, or Equipment

Inspecting Equipment, Structures, or Material

Performing General Physical Activities

Top Skills

Operation and Control

Operation Monitoring

Critical Thinking

Top Knowledge

Customer and Personal Service

Transportation

Public Safety and Security

| 2008 Estimate | 2018 Projection | Percent Change | Growth + Replacement Openings | = Total Openings | Entry | Average [Mean] | Experienced |
|---------------|-----------------|----------------|-------------------------------|------------------|----------|----------------|-------------|
| 701 | 782 | 11.55 | 81 | 285 | \$17,485 | \$25,754 | \$29,888 |

"N/A" indicates the data or information cannot be released due to reliability, availability or confidentiality issues.

| CODE | TITLE | PAGE | CODE | TITLE | PAGE |
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| 43-5031 | 911 Operator | 173 | 51-7011 | Antique Furniture Repairer | 229 |
| 51-8093 | Absorption Plant Operator | 231 | 41-9022 | Apartment Rental Agent | 160 |
| 23-2093 | Abstract Clerk | 80 | 29-1051 | Apothecary | 109 |
| 13-2011 | Accountants and Auditors | 52 | 45-2092 | Apple Picker | 184 |
| 25-1011 | Accounting Teacher | 81 | 15-1031 | Applications Developer | 57 |
| 43-3031 | Accounts Receivable Clerk | 163 | 25-1066 | Applied Psychology Teacher | 85 |
| 51-4121 | Acetylene Burner | 224 | 43-4171 | Appointment Clerk | 171 |
| 47-2081 | Acoustical Carpenter | 189 | 13-2021 | Appraisers and Assessors of Real Estate | 52 |
| 39-9032 | Activities Director | 151 | 51-5021 | Apprentice Job Printer | 225 |
| 25-1022 | Actuarial Science Teacher | 82 | 25-1124 | Arabic Teacher | 89 |
| 21-1011 | Addiction Counselor | 73 | 51-4121 | Arc Welder | 224 |
| 43-9051 | Addressing Machine Operator | 181 | 39-3091 | Arcade Attendant | 146 |
| 43-6011 | Administrative Aide | 177 | 17-1011 | Architects, Except Landscape and Naval | 60 |
| 43-9061 | Administrative Clerk | 182 | 17-3011 | Architectural and Civil Drafters | 64 |
| 11-3011 | Administrative Services Managers | 35 | 17-1011 | Architectural Designer | 60 |
| 47-2021 | Adobe Layer | 185 | 47-4011 | Architectural Inspector | 196 |
| 21-1021 | Adoption Agent | 75 | 27-1012 | Architectural Modeler | 97 |
| 25-3011 | Adult Education Teacher | 94 | 27-1011 | Art Directors | 96 |
| 25-3011 | Adult Literacy, Remedial Education, and GED Teachers and Instructors | 94 | 25-3021 | Art Teacher | 95 |
| 19-3021 | Advertising Analyst | 71 | 25-1121 | Art, Drama, and Music Teachers, Postsecondary | 87 |
| 11-2011 | Advertising and Promotions Managers | 33 | 47-2061 | Asphalt Patcher | 188 |
| 41-3011 | Advertising Sales Agents | 156 | 19-4031 | Assayer | 72 |
| 17-3013 | Aeronautical Drafter | 65 | 27-3042 | Assembly Instructions Writer | 104 |
| 25-1032 | Aeronautics Engineering Teacher | 82 | 51-1011 | Assembly Line Supervisor | 214 |
| 19-4011 | Agricultural and Food Science Technicians | 72 | 43-5061 | Assignment Agent | 175 |
| 45-2091 | Agricultural Equipment Operators | 183 | 49-2011 | ATM Specialist | 201 |
| 25-9021 | Agricultural Extension Agent | 95 | 19-2021 | Atmospheric and Space Scientists | 70 |
| 45-2011 | Agricultural Inspectors | 183 | 25-1051 | Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary | 84 |
| 25-1041 | Agricultural Sciences Teachers, Postsecondary | 83 | 43-3051 | Attendance Clerk | 164 |
| 25-1041 | Agricultural Soil Conservation Teacher | 83 | 21-1092 | Attendance Officer | 76 |
| 19-1013 | Agronomist | 68 | 23-1011 | Attorney | 78 |
| 47-2061 | Air Hammer Operator | 188 | 41-2011 | Auction Clerk | 153 |
| 53-2021 | Air Traffic Controllers | 241 | 27-4011 | Audio and Video Equipment Technicians | 105 |
| 53-6051 | Airplane Inspector | 246 | 27-4012 | Audio Engineer | 106 |
| 41-2021 | Airplane-Charter Clerk | 154 | 27-4011 | Audio Visual Production Specialist | 105 |
| 53-3011 | Ambulance Drivers and Attendants, Except Emergency Medical Technicians | 242 | 49-3021 | Auto Body Customizer | 203 |
| 39-3091 | Amusement and Recreation Attendants | 146 | 49-3023 | Auto Brake Mechanic | 204 |
| 29-1131 | Animal Pathologist | 113 | 53-3032 | Auto Carrier Driver | 243 |
| 29-1131 | Animal Surgeon | 113 | 53-7061 | Auto Detailer | 248 |
| 29-2056 | Animal Technician | 119 | 25-1194 | Auto Mechanics Teacher | 90 |
| 51-2022 | Anode Builder | 215 | 51-9122 | Auto Painter | 237 |
| | | | 41-2022 | Auto Parts Salesperson | 155 |

Occupational titles in bold indicate an "official" title per the 2000 Standard Occupational Classification (SOC) system; all other titles are considered alternates. Code and page numbers are included to reconcile alternate titles. This index is not exhaustive; we consider alternate title additions or deletions on an ongoing basis.

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| 49-2096 | Auto Phone Installer | 202 | 49-3091 | Bicycle Repairers | 207 |
| 51-6093 | Auto Top Mechanic | 228 | 43-3011 | Bill and Account Collectors | 162 |
| 49-3023 | Auto Transmission Specialist | 204 | 43-3021 | Billing and Posting Clerks and Machine Operators | 162 |
| 49-3021 | Automotive Body and Related Repairers | 203 | 51-5011 | Bindery Workers | 225 |
| 49-2096 | Automotive Electrician | 202 | 25-1042 | Biochemistry Teacher | 83 |
| 49-3023 | Automotive Service Technicians and Mechanics | 204 | 25-1042 | Biological Science Teachers, Postsecondary | 83 |
| 39-9011 | Baby Sitter | 150 | 49-9062 | Biomedical Equipment Technician | 212 |
| 25-1042 | Bacteriology Teacher | 83 | 21-2011 | Bishop | 77 |
| 51-5023 | Bag Printer | 226 | 39-3011 | Blackjack Dealer | 145 |
| 39-6011 | Baggage Handler | 149 | 49-9098 | Blacksmith's Helper | 214 |
| 39-6011 | Baggage Porters and Bellhops | 149 | 47-5081 | Blaster's Helper | 200 |
| 33-3011 | Bailiffs | 128 | 39-9021 | Blind Escort | 150 |
| 51-3011 | Bakers | 217 | 51-6031 | Blind Stitch Machine Operator | 227 |
| 45-2091 | Baler | 183 | 29-2012 | Blood Bank Technician | 114 |
| 31-9093 | Bandage Maker | 126 | 29-2011 | Blood Bank Technologist | 114 |
| 11-3031 | Bank Director | 36 | 41-1012 | Blood-Donor Recruiter Supervisor | 153 |
| 13-2061 | Bank Examiner | 54 | 51-4121 | Blow Torch Operator | 224 |
| 43-4141 | Banking Services Clerk | 170 | 11-1011 | Board Member | 32 |
| 11-9051 | Banquet Director | 41 | 33-9032 | Bodyguard | 131 |
| 35-1012 | Bar Manager | 132 | 47-2221 | Bolter | 193 |
| 35-2015 | Barbecue Cook | 134 | 13-2051 | Bond Analyst | 53 |
| 39-5011 | Barber Apprentice | 147 | 51-5011 | Book Coverer | 225 |
| 39-1021 | Barber Shop Manager | 144 | 51-5011 | Bookbinding Machine Operator | 225 |
| 25-1194 | Barbering Teacher | 90 | 43-3031 | Bookkeeping, Accounting, and Auditing Clerks | 163 |
| 39-5011 | Barbers | 147 | 53-7021 | Boomswing Operator | 247 |
| 35-3011 | Barkeeper | 135 | 33-3051 | Border Guard | 130 |
| 51-4033 | Barrel Polisher | 221 | 51-9111 | Bottle Caser | 236 |
| 53-7061 | Barrel Washer | 248 | 33-9032 | Bouncer | 131 |
| 35-3011 | Bartenders | 135 | 27-2022 | Boxing Trainer | 100 |
| 27-2022 | Baseball Club Manager | 100 | 43-4121 | Braille and Talking Books Clerk | 169 |
| 51-9023 | Batch Maker | 232 | 51-9012 | Brewmaster | 231 |
| 51-2022 | Battery Builder | 215 | 51-9051 | Brick Baker | 234 |
| 51-9061 | Bearing Inspector | 234 | 47-3011 | Brick Carrier | 194 |
| 39-5012 | Beautician | 148 | 47-3011 | Brick Washer | 194 |
| 37-2012 | Bed Maker | 141 | 47-2021 | Brickmasons and Blockmasons | 185 |
| 11-9012 | Beekeeper | 38 | 17-2051 | Bridge Engineer | 61 |
| 49-9043 | Belt Repairer | 210 | 47-2141 | Bridge Painter | 191 |
| 53-7011 | Belt Tender | 246 | 51-9041 | Briquette Maker | 233 |
| 21-1022 | Bereavement Counselor | 75 | 27-4012 | Broadcast Technicians | 106 |
| 51-9021 | Beveling and Edging Machine Operator | 232 | 27-3011 | Broadcaster | 102 |
| 51-9032 | Bias Machine Operator | 233 | 35-2014 | Broiler Cook | 134 |
| 49-3091 | Bicycle Mechanic | 207 | 13-2031 | Budget Analysts | 53 |

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| CODE | TITLE | PAGE | CODE | TITLE | PAGE |
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| 13-2052 | Budget Counselor | 54 | 41-2021 | Car Rental Agent | 154 |
| 11-3031 | Budget Director | 36 | 53-6021 | Car Runner | 245 |
| 13-2031 | Budget Examiner | 53 | 51-6093 | Car Seat Maker | 228 |
| 13-2021 | Building Appraiser | 52 | 29-2031 | Cardiographer | 115 |
| 17-1011 | Building Consultant | 60 | 29-2031 | Cardiopulmonary Technologist | 115 |
| 37-2011 | Building Custodian | 140 | 29-2031 | Cardiovascular Technologists and Technicians | 115 |
| 49-9042 | Building Maintenance Repairer | 210 | 39-9021 | Caregiver | 150 |
| 37-1011 | Building Superintendent | 139 | 43-5011 | Cargo and Freight Agents | 172 |
| 49-3042 | Bulldozer Mechanic | 205 | 53-7062 | Cargo Handler | 248 |
| 47-2073 | Bulldozer Operator | 189 | 53-1021 | Cargo Supervisor | 240 |
| 13-2011 | Bursar | 52 | 41-2012 | Carousel Attendant | 154 |
| 49-3031 | Bus and Truck Mechanics and Diesel Engine Specialists | 204 | 47-2031 | Carpenters | 186 |
| 53-3022 | Bus Drivers, School | 243 | 47-3012 | Carpenter's Mate | 194 |
| 53-3021 | Bus Drivers, Transit and Intercity | 242 | 47-2041 | Carpet Installers | 186 |
| 13-1111 | Business Consultant | 51 | 17-3031 | Cartographic Technician | 67 |
| 25-1011 | Business Teachers, Postsecondary | 81 | 51-3021 | Carver | 217 |
| 35-9011 | Busser | 138 | 21-1093 | Case Aide | 77 |
| 51-3021 | Butchers and Meat Cutters | 217 | 49-2011 | Cash Register Servicer | 201 |
| 53-3041 | Cab Driver | 244 | 41-2011 | Cashiers | 153 |
| 47-2031 | Cabinetmaker | 186 | 51-6093 | Casket Coverer | 228 |
| 51-7011 | Cabinetmakers and Bench Carpenters | 229 | 29-2034 | CAT Scan Operator | 116 |
| 47-3012 | Cabinetmaker's Helper | 194 | 43-4151 | Catalogue Clerk | 170 |
| 49-9052 | Cable Television Installer | 212 | 27-1024 | Catalogue Illustrator | 98 |
| 39-3091 | Caddy | 146 | 35-1012 | Caterer | 132 |
| 39-1021 | Caddymaster | 144 | 35-3021 | Caterers Aide | 136 |
| 35-1012 | Cafeteria Manager | 132 | 11-9051 | Catering Manager | 41 |
| 51-3011 | Cake Maker | 217 | 45-2011 | Cattle Examiner | 183 |
| 43-3021 | Calculating Machine Operator | 162 | 47-1011 | Cement Contractor | 185 |
| 25-1022 | Calculus Teacher | 82 | 47-2051 | Cement Masons and Concrete Finishers | 188 |
| 17-3023 | Calibration Laboratory Technician | 66 | 53-3032 | Cement Truck Driver | 243 |
| 27-4021 | Camera Operator | 106 | 27-3041 | Censor | 104 |
| 35-2012 | Camp Cook | 133 | 49-2022 | Central Office Equipment Installer | 201 |
| 39-9032 | Camp Counselor | 151 | 51-4072 | Centrifugal Casting Machine Operator | 223 |
| 11-2011 | Campaign Director | 33 | 47-2044 | Ceramic Tile Installer | 187 |
| 33-3051 | Campus Police | 130 | 51-9081 | Ceramist | 235 |
| 19-1042 | Cancer Researcher | 69 | 31-1012 | Certified Nursing Assistant | 122 |
| 51-9123 | Candy Dipper | 238 | 13-2011 | Certified Public Accountant (C.P.A.) | 52 |
| 51-3092 | Candy Maker | 218 | 49-3053 | Chainsaw Mechanic | 207 |
| 35-3022 | Canteen Operator | 136 | 37-2012 | Chamber Maid | 141 |
| 27-2042 | Cantor | 101 | 31-1013 | Charge Attendant | 123 |
| 41-2031 | Car Dealer | 155 | 35-1011 | Chefs and Head Cooks | 132 |
| 53-6021 | Car Hop | 245 | 21-1011 | Chemical Dependency Counselor | 73 |

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| 25-1052 | Chemistry Teachers, Postsecondary | 84 | 19-2021 | Climatologist | 70 |
| 53-7021 | Cherry Picker Operator | 247 | 25-1051 | Climatology Teacher | 84 |
| 47-2111 | Chief Electrician | 190 | 19-3031 | Clinical, Counseling, and School Psychologists | 71 |
| 11-1011 | Chief Executives | 32 | 27-2022 | Coaches and Scouts | 100 |
| 33-1012 | Chief of Police | 127 | 51-6052 | Coat Maker | 228 |
| 11-1011 | Chief Operating Officer | 32 | 51-9121 | Coating, Painting, and Spraying Machine Setters, Operators, and Tenders | 237 |
| 39-3021 | Chief Projectionist | 145 | 35-3031 | Cocktail Waiter | 137 |
| 21-1021 | Child Abuse Worker | 75 | 35-2021 | Coffee Maker | 135 |
| 39-9011 | Child Care Workers | 150 | 51-3091 | Coffee Roaster | 218 |
| 25-1066 | Child Development Teacher | 85 | 49-9091 | Coin, Vending, and Amusement Machine Servicers and Repairers | 213 |
| 19-3031 | Child Psychologist | 71 | 43-3011 | Collection Clerk | 162 |
| 11-9151 | Child Welfare Director | 45 | 43-4021 | Collection Correspondent | 165 |
| 21-1021 | Child, Family, and School Social Workers | 75 | 49-3021 | Collision Mechanic | 203 |
| 25-2011 | Childhood Development Teacher | 91 | 27-3022 | Columnist | 103 |
| 47-2021 | Chimney Builder | 185 | 45-2091 | Combine Operator | 183 |
| 29-1011 | Chiropractors | 107 | 35-3021 | Combined Food Preparation and Serving Workers, Including Fast Food | 136 |
| 27-2041 | Choirmaster | 101 | 17-2141 | Combustion Engineer | 63 |
| 45-1011 | Christmas Tree Farm Manager | 182 | 53-2012 | Commercial Pilots | 241 |
| 27-2042 | Church Organist | 101 | 43-2011 | Communication Center Operator | 161 |
| 51-9195 | Cigar Roller | 239 | 25-1122 | Communications Teachers, Postsecondary | 88 |
| 49-9091 | Cigarette Machine Mechanic | 213 | 21-1023 | Community Mental Health Worker | 76 |
| 51-9041 | Cigarette Machine Operator | 233 | 11-3041 | Compensation and Benefits Managers | 36 |
| 43-4031 | Circuit Court Clerk | 166 | 13-1072 | Compensation, Benefits, and Job Analysis Specialists | 49 |
| 23-1023 | Circuit Court Judge | 79 | 43-4051 | Complaint Adjuster | 167 |
| 43-4121 | Circulation Clerk | 169 | 13-1041 | Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation | 47 |
| 11-2011 | Circulation Director | 33 | 47-2042 | Composition Floor Setter | 187 |
| 25-3021 | Citizenship Teacher | 95 | 47-2131 | Composition Weatherboard Installer | 191 |
| 33-3051 | City Constable | 130 | 51-5022 | Compositor | 226 |
| 25-1032 | Civil Engineering Teacher | 82 | 11-3031 | Comptroller | 36 |
| 17-3022 | Civil Engineering Technicians | 66 | 11-3021 | Computer and Information Systems Managers | 35 |
| 17-2051 | Civil Engineers | 61 | 27-1014 | Computer Artist | 97 |
| 43-9041 | Claim Taker | 181 | 43-9031 | Computer Compositor | 180 |
| 13-1031 | Claims Adjusters, Examiners, and Investigators | 47 | 27-1014 | Computer Graphics Illustrator | 97 |
| 13-1031 | Claims Agent | 47 | 49-2011 | Computer Installer | 201 |
| 43-1011 | Claims Supervisor | 161 | 43-9011 | Computer Operators | 179 |
| 25-1123 | Classics Teacher | 88 | 15-1021 | Computer Programmer Aide | 57 |
| 43-4151 | Classified Advertisement Clerk | 170 | 15-1021 | Computer Programmers | 57 |
| 51-9023 | Clay Mixer | 232 | 11-3021 | Computer Programming Manager | 35 |
| 53-7061 | Cleaners of Vehicles and Equipment | 248 | | | |
| 51-3021 | Cleaver | 217 | | | |
| 21-2011 | Clergy | 77 | | | |

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| 25-1021 | Computer Science Teachers, Postsecondary | 81 | 13-1051 | Cost Estimators | 48 |
| 15-1031 | Computer Software Engineers, Applications | 57 | 13-1021 | Cotton Broker | 45 |
| 15-1041 | Computer Support Specialists | 58 | 43-5111 | Counter | 176 |
| 15-1051 | Computer Systems Analysts | 58 | 41-2021 | Counter and Rental Clerks | 154 |
| 43-4071 | Computer Tape Librarian | 168 | 35-3022 | Counter Attendants, Cafeteria, Food Concession, and Coffee Shop | 136 |
| 49-2011 | Computer, Automated Teller, and Office Machine Repairers | 201 | 13-2021 | County Assessor | 52 |
| 51-4011 | Computer-Controlled Machine Tool Operators, Metal and Plastic | 219 | 43-4061 | County Service Officer | 167 |
| 17-2051 | Concrete Engineer | 61 | 43-5021 | Couriers and Messengers | 173 |
| 47-2051 | Concrete Floor Installer | 188 | 33-3011 | Court Officer | 128 |
| 11-9141 | Condominium Association Manager | 44 | 23-2091 | Court Reporters | 80 |
| 13-1121 | Conference Planner | 51 | 23-2091 | Court Transcriber | 80 |
| 13-1121 | Conference Service Coordinator | 51 | 43-4031 | Court, Municipal, and License Clerks | 166 |
| 47-5071 | Connection Worker | 199 | 53-3041 | Courtesy Van Driver | 244 |
| 43-9011 | Console Operator | 179 | 27-1012 | Craft Artists | 97 |
| 47-4011 | Construction and Building Inspectors | 196 | 53-7021 | Crane and Tower Operators | 247 |
| 47-2061 | Construction Craft Laborer | 188 | 39-3011 | Craps Dealer | 145 |
| 17-2051 | Construction Engineer | 61 | 13-1051 | Crating and Moving Estimator | 48 |
| 49-3042 | Construction Equipment Mechanic | 205 | 25-1123 | Creative Writing Teacher | 88 |
| 13-1051 | Construction Estimator | 48 | 43-4041 | Credit Authorizers, Checkers, and Clerks | 166 |
| 47-2221 | Construction Ironworker | 193 | 13-2071 | Credit Counselor | 55 |
| 47-2061 | Construction Laborers | 188 | 43-4041 | Credit Interviewer | 166 |
| 11-9021 | Construction Managers | 39 | 43-4041 | Credit Rating Inspector | 166 |
| 29-2081 | Contact Lens Fitter | 120 | 51-4031 | Crimping Machine Operator | 220 |
| 27-4012 | Control Room Technician | 106 | 27-3022 | Critic | 103 |
| 53-2021 | Control Tower Operator | 241 | 53-2012 | Crop Duster | 241 |
| 13-1121 | Convention Manager | 51 | 27-3043 | Crossword Puzzle Maker | 105 |
| 53-7011 | Conveyor Operators and Tenders | 246 | 51-9081 | Crown and Bridge Technician | 235 |
| 33-3012 | Convict Guard | 129 | 51-9021 | Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders | 232 |
| 35-2011 | Cooks, Fast Food | 133 | 35-3041 | Curb Attendant | 137 |
| 35-2012 | Cooks, Institution and Cafeteria | 133 | 47-2051 | Curb Builder | 188 |
| 35-2014 | Cooks, Restaurant | 134 | 51-3091 | Curing Room Worker | 218 |
| 35-2015 | Cooks, Short Order | 134 | 21-1012 | Curriculum Counselor | 74 |
| 51-8021 | Cooling System Operator | 230 | 11-9032 | Curriculum Director | 40 |
| 27-3041 | Copy Editor | 104 | 25-9031 | Curriculum Specialist | 96 |
| 27-3043 | Copy Writer | 105 | 33-3012 | Custodial Officer | 129 |
| 51-4072 | Core Mounter | 223 | 43-4051 | Customer Service Representatives | 167 |
| 13-1041 | Coroner | 47 | 15-1041 | Customer Support Analyst | 58 |
| 23-1011 | Corporate Counsel | 78 | 51-9032 | Cutting and Slicing Machine Setters, Operators, and Tenders | 233 |
| 33-3012 | Correctional Officers and Jailers | 129 | 51-4031 | Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic | 220 |
| 43-4021 | Correspondence Clerks | 165 | 29-2012 | Cytotechnician | 114 |
| 27-1023 | Corsage Maker | 98 | | | |

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| 29-2011 | Cytotechnologist | 114 | 11-9151 | Director of Casework Services | 45 |
| 49-3041 | Dairy Equipment Installer | 205 | 11-9031 | Director of Child Care Center | 39 |
| 11-9012 | Dairy Farmer | 38 | 13-1061 | Director of Civil Defense | 48 |
| 51-9012 | Dairy Processing Equipment Operator | 231 | 11-9081 | Director of Housing | 42 |
| 25-1041 | Dairy Science Teacher | 83 | 25-9031 | Director of Instructional Materials | 96 |
| 19-4011 | Dairy Technologist | 72 | 11-9111 | Director of Occupational Therapy | 43 |
| 43-9021 | Data Entry Keyers | 179 | 11-9032 | Director of Physical Education | 40 |
| 43-9011 | Data Processing Clerk | 179 | 11-3061 | Director of Purchasing | 38 |
| 11-3021 | Data Processing Manager | 35 | 21-2021 | Director of Religious Education | 78 |
| 15-1051 | Data Processing Systems Project Planner | 58 | 11-2022 | Director of Sales | 34 |
| 11-3021 | Data Systems Manager | 35 | 11-9033 | Director of Student Affairs | 40 |
| 43-9021 | Data Typist | 179 | 21-2021 | Directors, Religious Activities and Education | 78 |
| 11-9033 | Dean | 40 | 29-2071 | Disability Rater | 120 |
| 27-1025 | Decorator | 99 | 41-2011 | Disbursement Clerk | 153 |
| 35-3021 | Deli Clerk | 136 | 35-9021 | Dishwashers | 138 |
| 41-9011 | Demonstrators and Product Promoters | 159 | 43-5032 | Dispatchers, Except Police, Fire, and Ambulance | 174 |
| 31-9091 | Dental Assistants | 125 | 27-1026 | Display Artist | 99 |
| 29-2021 | Dental Hygienists | 115 | 51-8031 | Disposal Operator | 230 |
| 51-9081 | Dental Laboratory Technicians | 235 | 51-9012 | Distiller | 231 |
| 43-6013 | Dental Secretary | 178 | 11-1021 | District Manager | 32 |
| 25-1071 | Dentistry Teacher | 86 | 41-1012 | District Sales Manager | 153 |
| 29-1021 | Dentists, General | 107 | 49-9098 | Diver's Helper | 214 |
| 41-1011 | Department Manager | 152 | 53-1031 | Dockmaster | 240 |
| 11-1021 | Department Store General Manager | 32 | 29-1041 | Doctor of Optometry | 108 |
| 33-3021 | Deputy United States Marshal | 129 | 43-4071 | Document Clerk | 168 |
| 47-5011 | Derrick Operators, Oil and Gas | 198 | 27-3042 | Documentation Writer | 104 |
| 43-9031 | Desktop Publishers | 180 | 39-2021 | Dog Groomer | 144 |
| 33-3021 | Detectives and Criminal Investigators | 129 | 39-3031 | Door Attendant | 146 |
| 11-9021 | Developer | 39 | 39-9041 | Dormitory Supervisor | 152 |
| 29-2032 | Diagnostic Medical Sonographers | 116 | 51-3093 | Doughnut Maker | 219 |
| 41-4012 | Diamond Broker | 158 | 51-4021 | Draw Bench Operator | 220 |
| 51-9071 | Diamond Expert | 235 | 51-4032 | Drill Press Operator | 221 |
| 43-9022 | Dictaphone Typist | 180 | 51-4032 | Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic | 221 |
| 17-3013 | Die Designer | 65 | 17-2171 | Drilling Engineer | 64 |
| 51-4111 | Die Finisher | 223 | 21-1011 | Drug Counselor | 73 |
| 51-4194 | Die Polisher | 224 | 29-1051 | Druggist | 109 |
| 51-4111 | Die Sinker | 223 | 41-1012 | Dry Cleaning Manager | 153 |
| 49-3031 | Diesel Mechanic | 204 | 47-2081 | Drywall and Ceiling Tile Installers | 189 |
| 29-2051 | Dietetic Technicians | 117 | 47-2211 | Duct Installer, Metal Work | 193 |
| 29-1031 | Dietitians and Nutritionists | 108 | 29-2031 | E.K.G. Technician | 115 |
| 35-9011 | Dining Room and Cafeteria Attendants and Bartender Helpers | 138 | 29-2041 | E.M.T. | 117 |
| 35-9031 | Dining Room Host | 139 | 19-1023 | Ecologist | 69 |

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| 11-9032 | Education Administrators, Elementary and Secondary School | 40 | 13-1071 | Employment Interviewer | 49 |
| 11-9033 | Education Administrators, Postsecondary | 40 | 13-1071 | Employment, Recruitment, and Placement Specialists | 49 |
| 11-9031 | Education Administrators, Preschool and Child Care Center/Program | 39 | 49-1011 | Engine Repair Supervisor | 200 |
| 11-3042 | Education and Training Manager | 37 | 11-9041 | Engineering Managers | 41 |
| 25-1081 | Education Teachers, Postsecondary | 87 | 11-9041 | Engineering Research Manager | 41 |
| 21-1012 | Educational Advisor | 74 | 25-1032 | Engineering Teachers, Postsecondary | 82 |
| 25-9031 | Educational Consultant | 96 | 25-1123 | English Language and Literature Teachers, Postsecondary | 88 |
| 21-1012 | Educational, Vocational, and School Counselors | 74 | 19-2041 | Environmental Analyst | 70 |
| 11-3042 | Efficiency Manager | 37 | 17-2081 | Environmental Engineers | 62 |
| 43-5041 | Electric Meter Reader | 174 | 19-2041 | Environmental Scientists and Specialists, Including Health | 70 |
| 49-2097 | Electric Organ Technician | 203 | 13-2072 | Escrow Officer | 55 |
| 47-4071 | Electric Sewer Cleaning Machine Operator | 198 | 13-2052 | Estate Planner | 54 |
| 49-9051 | Electric Utility Wire Stretcher | 211 | 39-5094 | Esthetician | 149 |
| 17-3023 | Electrical and Electronic Engineering Technicians | 66 | 25-1123 | Etymology Teacher | 88 |
| 51-2022 | Electrical and Electronic Equipment Assemblers | 215 | 49-2022 | Exchange Mechanic | 201 |
| 17-3012 | Electrical and Electronics Drafters | 65 | 43-2011 | Exchange Operator | 161 |
| 49-2095 | Electrical and Electronics Repairers, Powerhouse, Substation, and Relay | 202 | 39-1011 | Executive Casino Host | 143 |
| 25-1032 | Electrical Engineering Teacher | 82 | 35-1011 | Executive Chef | 132 |
| 17-2071 | Electrical Engineers | 62 | 43-6011 | Executive Secretaries and Administrative Assistants | 177 |
| 47-4011 | Electrical Inspector | 196 | 39-9031 | Exercise Teacher | 151 |
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| 13-2061 | Pension Examiner | 54 | 33-3021 | Police Inspector | 129 |
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| 13-2052 | Personal Financial Advisors | 54 | 19-1013 | Pomologist | 68 |
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| 25-1071 | Pharmacology Teacher | 86 | 51-5022 | Prepress Technicians and Workers | 226 |
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| 31-1013 | Psychiatric Orderly | 123 | 43-5071 | Receiver | 175 |
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| 11-2031 | Public Relations Managers | 34 | 43-4081 | Register Clerk | 168 |
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| 25-1122 | Public Speaking Teacher | 88 | 17-2071 | Relay Engineer | 62 |
| 27-3031 | Publicist | 103 | 49-2095 | Relay Technician | 202 |
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| 35-3041 | Room Service Clerk | 137 | 29-2012 | Serology Technician | 114 |
| 47-5011 | Rotary Derrick Operator | 198 | 53-6031 | Service Station Attendants | 245 |
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| 51-9041 | Rubber Laminating Machine Operator | 233 | 51-9032 | Shear Operator | 233 |
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| 51-9122 | Rust Proofer | 237 | 47-2082 | Sheet Rock Taper | 190 |
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| 35-1011 | Sous Chef | 132 | 49-9062 | Surgical Instrument Mechanic | 212 |
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| 51-9083 | Spectacle Truer | 236 | 15-1021 | Systems Programmer | 57 |
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| 29-1127 | Speech-Language Pathologists | 113 | 51-6052 | Tailors, Dressmakers, and Custom Sewers | 228 |
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| 39-2021 | Stable Attendant | 144 | 35-3011 | Taproom Attendant | 135 |
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| 43-4031 | Warrant Clerk | 166 | 53-1021 | Yard Supervisor | 240 |
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