

Welders

■ What Welders Do

Welders weld or join metal parts. They also fill holes, indentions, or seams of metal products, using hand-held welding equipment.

■ Pay

In 2015, median pay for a welder was \$38,150 + per diem per year.

■ Entry-Level Education, Work Experience, and Training

Most welder jobs require a high school diploma or equivalent plus moderate-term on-the-job training.

■ Number of Jobs

In 2014, there were 397,900 welder jobs in the United States.

■ Work Environment

Welders may work outdoors, often in inclement weather, or indoors, sometimes in a confined area. They may work on a scaffold high off the ground, and they occasionally must lift heavy objects and work in awkward positions. Most work full time and overtime is common in this occupation.

■ How to Become One

Training for welders varies. Training ranges from a few weeks of school or on-the-job training for low-skilled positions to several years of combined school and on-the-job training for highly skilled jobs.

Pipefitters

■ What Pipefitters Do

Pipefitters install and repair pipes that carry water, steam, air, or other liquids or gases to and in businesses, homes, and factories.

■ Pay

In 2015, median pay for a pipefitter was \$50,620 per year.

■ Entry-Level Education, Work Experience, and Training

Most pipefitter jobs require a high school diploma or equivalent plus an apprenticeship.

■ Number of Jobs

In 2014, there were 425,000 pipefitter jobs in the United States.

■ Work Environment

Pipefitters work in factories, homes, businesses, and wherever else there are pipes or septic systems. Workers must often lift heavy materials, climb ladders, and work in tight spaces. Some pipefitters travel to a variety of work sites every day.

■ How to Become One

Most pipefitters learn on the job through an apprenticeship. Some start out by attending a technical school. Most states and localities require pipefitters to have a license.

Fabricators

■ What Fabricators Do

Fabricators assemble both finished products and the parts that go into them. They use tools, machines, and their hands to make engines, computers, aircraft, toys, electronic devices, and more.

■ Pay

In 2015, median pay for a fabricator was \$30,080 per year.

■ Entry-Level Education, Work Experience, and Training

Most fabricator jobs require a high school diploma or equivalent.

■ Number of Jobs

In 2014, there were 1,834,000 fabricator jobs in the United States.

■ Work Environment

Most fabricators work in manufacturing plants. Some of the work may involve long periods of standing or sitting. Although workers may come into contact with harmful chemicals or fumes, the work generally is not dangerous. Most work full time, and they often work evenings and weekends.

■ How to Become One

The education level and qualifications needed to enter this job can vary, depending on the industry and employer. Although a high school diploma is enough for most jobs, experience and extra training is needed for more advanced assembly work.

Chemical Engineers

■ What Chemical Engineers Do

Chemical engineers apply the principles of chemistry, biology, and physics to solve problems. These problems involve the production or use of chemicals, fuel, drugs, food, and many other products. They design processes and equipment for large-scale safe and sustainable manufacturing, plan and test methods of manufacturing products and treating byproducts, and supervise production.

■ Pay

In 2015, median pay for a chemical engineer was \$97,360 per year.

■ Entry-Level Education, Work Experience, and Training

Most chemical engineer jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 34,300 chemical engineer jobs in the United States.

■ Work Environment

Chemical engineers work mostly in offices or laboratories. They may spend time at industrial plants, refineries, and other locations, where they monitor or direct operations or solve onsite problems. Nearly all chemical engineers work full time.

■ How to Become One

Chemical engineers must have a bachelor's degree in chemical engineering, now sometimes known as a bachelor's degree in chemical and biomolecular engineering. Employers also value practical experience, so cooperative engineering programs, in which students earn college credit for structured job experience, are valuable as well. Having a Professional Engineer license may increase chances for employment.

Mechanical Engineers

■ What Mechanical Engineers Do

Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers design, develop, build, and test mechanical devices, including tools, engines, and machines.

■ Pay

In 2015, median pay for a mechanical engineer was \$83,590 per year.

■ Entry-Level Education, Work Experience, and Training

Most mechanical engineer jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 277,500 mechanical engineer jobs in the United States.

■ Work Environment

Mechanical engineers generally work in professional office settings. They may occasionally visit worksites where a problem or piece of equipment needs their personal attention. Mechanical engineers work mostly in engineering services, research and development, manufacturing industries, and the federal government.

■ How to Become One

Mechanical engineers need a bachelor's degree. A graduate degree is typically needed for promotion into managerial positions. Mechanical engineers who sell services publicly must be licensed in all states and the District of Columbia.

Civil Engineers

■ What Civil Engineers Do

Civil engineers design and supervise large construction projects, including roads, buildings, airports, tunnels, dams, bridges, and systems for water supply and sewage treatment.

■ Pay

In 2015, median pay for a civil engineer was \$82,220 per year.

■ Entry-Level Education, Work Experience, and Training

Most civil engineer jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 281,400 civil engineer jobs in the United States.

■ Work Environment

Civil engineers generally work indoors in offices. However, they sometimes spend time outdoors at construction sites so they can monitor operations or solve problems at the site. Most work full time.

■ How to Become One

Civil engineers need a bachelor's degree. They typically need a graduate degree for promotion to managerial positions. Civil engineers who sell their own services publicly must be licensed in all states and the District of Columbia.

Designs Engineers

■ What Designs Engineers Do

Designs engineers develop the concepts for manufactured products, such as cars, home appliances, and toys. They combine art, business, and engineering to make products that people use every day.

■ Pay

In 2015, median pay for a designs engineer was \$67,130 per year.

■ Entry-Level Education, Work Experience, and Training

Most designs engineer jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 38,400 designs engineer jobs in the United States.

■ Work Environment

Designs engineers work in offices in a variety of industries. Although they design manufactured products, only about 29 percent are employed directly by manufacturers.

■ How to Become One

A bachelor's degree is usually required for most entry-level design engineer jobs. It is also important to have a professional portfolio with examples of best design projects.

Electrical Engineers

■ What Electrical Engineers Do

Electrical engineers design, develop, test, and supervise the manufacturing of electrical equipment such as electric motors, radar and navigation systems, communications systems, and power generation equipment.

■ Pay

In 2015, median pay for a electrical engineer was \$95,230 per year.

■ Entry-Level Education, Work Experience, and Training

Most electrical engineer jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 315,900 electrical engineer jobs in the United States.

■ Work Environment

Electrical engineers work primarily in industries that conduct research and development, for engineering services firms, in manufacturing, and in the federal government. They generally work indoors in offices. However, they may have to visit sites to observe a problem or a piece of complex equipment.

■ How to Become One

Electrical engineers must have a bachelor's degree. Employers also value practical experience, so graduates of cooperative engineering programs, in which students earn academic credit for structured work experience, are valuable as well.

Security Guards

■ What Security Guards Do

Security guards patrol and inspect property against fire, theft, vandalism, terrorism, and illegal activity. They monitor people and buildings in an effort to prevent crime.

■ Pay

In 2015, median pay for a security guard was \$24,680 per year.

■ Entry-Level Education, Work Experience, and Training

Most security guard jobs require a high school diploma or equivalent.

■ Number of Jobs

In 2014, there were 1,102,500 security guard jobs in the United States.

■ Work Environment

Security guards work in a wide variety of environments, including public buildings, retail stores, and office buildings. Guards who serve as transportation security screeners work in air, sea, and rail terminals and other transportation facilities.

■ How to Become One

Most jobs as a security guard require a high school diploma or GED. Most states require guards to be licensed.

Firefighters

■ What Firefighters Do

Firefighters protect the public by responding to fires and other emergencies. They are frequently the first emergency personnel on the scene of an accident.

■ Pay

In 2015, median pay for a firefighter was \$46,870 per year.

■ Entry-Level Education, Work Experience, and Training

Most firefighter jobs require a postsecondary non-degree award plus long-term on-the-job training.

■ Number of Jobs

In 2014, there were 327,300 firefighter jobs in the United States.

■ Work Environment

When not on the scene of an emergency, firefighters work at fire stations, where they sleep, eat, and remain on call during shifts that often last 24 hours.

■ How to Become One

Firefighters typically enter the occupation with a postsecondary non-degree award in fire science or a related discipline. In many jurisdictions, however, the entry-level education needed to become a firefighter is a high school diploma or equivalent. Most firefighters also must pass written and physical tests, complete a series of interviews, and hold an emergency medical technician (EMT) certification. All firefighters receive extensive training after being hired.

Occupational Health and Safety Specialists

■ What They Do

Occupational health and safety specialists analyze many types of work environments and work procedures. Specialists inspect workplaces for adherence to regulations on safety, health, and the environment. They also design programs to prevent disease or injury to workers and damage to the environment.

■ Pay

In 2015, median pay for a occupational health and safety specialist was \$70,210 per year.

■ Entry-Level Education, Work Experience, and Training

Most occupational health and safety specialist jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 70,300 occupational health and safety specialist jobs in the United States.

■ Work Environment

Occupational health and safety specialists work in a variety of settings, such as offices, factories, and mines. Their jobs often involve fieldwork and travel. Most specialists work full time.

■ How to Become One

Occupational health and safety specialists typically need a bachelor's degree. All specialists are trained in the specific laws or inspection procedures through a combination of classroom and on-the-job training.

Environmental Engineer

■ What They Do

Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They are involved in efforts to improve recycling, waste disposal, public health, and control of water and air pollution.

■ Pay

In 2015, median pay for an environmental engineer was \$84,560 per year.

■ Entry-Level Education, Work Experience, and Training

Most environmental engineering jobs require a bachelor's degree.

■ Number of Jobs

In 2014, there were 55,100 environmental engineering jobs in the United States.

■ Work Environment

Environmental engineers work in offices, laboratories, and the field.

■ How to Become One

Environmental engineers must have a bachelor's degree in environmental engineering or a related field, such as civil, chemical, or mechanical engineering. Employers also value practical experience. Therefore, cooperative engineering programs, which provide college credit for structured job experience, are valuable as well. Getting a license improves the chances of employment.

Operators

■ What Operators Do

Operators control the systems that produce petroleum products such as gasoline, jet fuel, and propane.

■ Pay

In 2015, median pay for a refinery operator was \$65,190 per year.

■ Entry-Level Education, Work Experience, and Training

Most operator jobs require a high school diploma or equivalent, and work experience.

■ Number of Jobs

In 2014, there were 42,400 operator jobs in the United States.

■ Work Environment

Most operators are employed full time, and many work rotating shifts, which can be tiring.

■ How to Become One

Power plant operators need a combination of education, experience, and extensive on-the-job training. Many jobs require a background check, and workers are subject to drug and alcohol screenings.

Chemists

■ What Chemists Do

Chemists study the structures, compositions, reactions, and other properties of substances. They use their knowledge to develop new and improved products, processes, and materials.

■ Pay

In 2015, median pay for a chemist was \$72,610 per year.

■ Entry-Level Education, Work Experience, and Training

Most chemist jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 98,400 chemist jobs in the United States.

■ Work Environment

Chemists work in laboratories and offices. They typically work full time and regular hours.

■ How to Become One

Chemists need at least a bachelor's degree in chemistry or a related field. However, a master's degree or Ph.D. is needed for many research jobs.

Industrial/Electrical Techs

■ What They Do

Industrial/electrical technicians help engineers design and develop computers, communications equipment, process monitoring devices, navigational equipment, and other electrical and electronic equipment. They often work in product evaluation and testing, using measuring and diagnostic devices to adjust, test, and repair industrial equipment.

■ Pay

In 2015, median pay for a industrial/electrical tech was \$61,130 per year.

■ Entry-Level Education, Work Experience, and Training

Most industrial/electrical tech jobs require an associate's degree, tech degree, or on-the-job training.

■ Number of Jobs

In 2014, there were 139,400 industrial/electrical tech jobs in the United States.

■ Work Environment

Technicians work closely with electrical engineers. They work primarily in industrial settings, such as refineries, paper mills, and other process plants.

■ How to Become One

Technicians typically need an associate's degree, tech degree, or on-the-job training.

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Finance Professionals

■ What Finance Professionals Do

Finance professionals prepare and examine financial records. They ensure that financial records are accurate and that taxes are paid properly and on time. They also assess financial operations and work to help ensure that organizations run efficiently.

■ Pay

In 2015, median pay for a finance professional was \$67,190 per year.

■ Entry-Level Education, Work Experience, and Training

Most finance professional jobs require a Bachelor's degree.

■ Number of Jobs

In 2014, there were 1,332,700 finance professional jobs in the United States.

■ Work Environment

Most finance professionals work full time. In 2014, one in five worked more than 40 hours per week. Longer hours are typical at certain times of the year, such as at the end of the budget year or during tax season.

■ How to Become One

Most employers require a candidate to have a Bachelor's degree in accounting or a related field. Certification within a specific field of accounting improves job prospects. For example, many accountants become Certified Public Accountants (CPAs).

Electricians

■ What Electricians Do

Electricians install and maintain electrical systems in homes, businesses, and factories.

■ Pay

In 2015, median pay for a electrician was \$51,880 per year.

■ Entry-Level Education, Work Experience, and Training

Most electrician jobs require a high school diploma or equivalent plus an apprenticeship.

■ Number of Jobs

In 2014, there were 628,800 electrician jobs in the United States.

■ Work Environment

Electricians work indoors and out, in nearly every type of facility. Almost all electricians work full time, which may include evenings and weekends. Although the work is not as dangerous as some other construction occupations, common risks include electrical shocks and burns, cuts, and falls.

■ How to Become One

Although most electricians learn through a formal apprenticeship, some start out by attending a technical school. Most states require licensure.

Human Resources

■ What They Do

Human resources professionals plan, direct, and coordinate the administrative functions of an organization. They oversee the recruiting, interviewing, and hiring of new staff; consult with senior management on strategic planning; and serve as a link between an organization's management and its employees. They recruit, screen, interview, and place workers. They also may handle human resources work in a variety of other areas, such as employee relations, payroll and benefits, and training.

■ Pay

In 2015, median pay for a human resources specialist was \$58,350.

■ Entry-Level Education, Work Experience, and Training

Human resources professionals need a combination of education and experience. Most positions require a bachelor's degree. Although most employers prefer or require applicants who have a bachelor's degree, some may accept related work experience as a substitute for education. Some management jobs require a master's degree. HR professionals should have strong interpersonal skills.

■ Number of Jobs

In 2014, there were 482,000 human resources specialist jobs in the United States.

■ Work Environment

Although human resources specialists are employed in nearly every industry, many are concentrated in employment services, working for staffing and human resources firms. Some travel extensively to attend job fairs, visit college campuses, and meet with applicants. Most work full time.

■ How to Become One

Human resources typically need a bachelor's degree and a master's degree may be required for some positions.