



Electrical Engineering

If you have ever considered what makes an LCD television work or how power is sent across the country, then you have considered the work of an electrical engineer. Electrical Engineering jobs are critical to an advanced society. Everything from electronic toys to power turbines are designed by electrical engineers. As the sophistication of home and work automations increases, the demand for hybrid electric vehicles will require the skills of an electrical engineer. Read on to find out more about the profession.



Job Outlook

The outlook for [electrical engineering jobs](#) is stable. The number of electrical engineering jobs represents the second largest group of engineers behind

software engineers. Currently, the number of engineers who are leaving the industry through retirement, promotions, or job changes balances the number of graduates. While the number of electrical engineering graduates has been slowly declining since 2003, the demand for electronic equipment has increased, resulting in a positive job outlook for electrical engineering jobs.

Typical Position Responsibilities

Electrical engineers have the responsibility for designing and analyzing systems, parts and components. Most electrical engineering jobs require an ability to integrate information from designers, marketers, and customers into a product that is needed by the customers, and gives a strategic advantage to the company. The electrical engineer may also be required to create drawings and instructions for the manufacturing facilities. Depending on the industry, the electrical engineering job may also establish instructions and formats, as well as prepare documents and specifications based on the requirements for the project.

An electrical engineer will also need to be a troubleshooter to determine the underlying problem for the system, as well as establish processes to avoid future problems.

Depending on the specialization, an electrical engineer may work in a variety of sub-disciplines, including telecommunications, control, computers, electronics, power, signal processing, microelectronics, and instrumentation.

Because electrical engineering jobs work with industries that

ship around the world, an electrical engineer may be required to be familiar with NAFTA and other foreign trade zone agreements. In addition to world trade agreements, some electrical engineering jobs in medical devices may need to work with the FDA. For companies who construct electronics to measure environmental pollutants, electrical engineers may need to work with the Environmental Protection Agency or Fish and Wildlife service.

Defense Department contracts demand that the electrical engineer possesses a full understanding for the need to pass strict requirements when designing and building systems.

More senior electrical engineering jobs may also have management responsibilities for teams of other engineers who are responsible for completing product design projects.

Industry Outlook

Electronic products/components manufacturers employ the majority of electrical engineers. The demand for sophisticated electronics for home and industry will continue to increase. In addition, the medical device industry will require more electrical engineers. Defense contractors will create more electrical engineering jobs, as aircraft, guidance, targeting, and firing systems are retired and upgraded. The fastest growth will be with large defense contractors.

Job Locations

Almost 40% of all electrical engineering jobs are in six states (New York, New Jersey, Maryland, Georgia, Texas, and California). The highest salaries are on the East and West coasts.

Required Skills

If you have a proficiency in math, as well as an excellent understanding of how to use a computer, then you may have the proficiency to enroll in a Bachelor's of Science program



Engineering Career Feature

for electrical engineering, which is the basic requirement for an electrical engineer. Some electrical engineers pursue an advanced degree. Masters level and Ph.D. level education is in high demand by top corporations, including startup and Fortune 500 levels. The Ph.D. degree has a heavy emphasis in research and publications. Ph.D. graduates in electrical engineering are positioned to work in or lead research and development labs, or teach at a university.

Electrical engineering jobs may also require that the person be a professional engineer. The National Society of Professional Engineers and the Institute of Electrical and Electronics Engineers provide oversight, as well as a code of conduct for professional engineers. The Professional Engineer certification also requires that the electrical engineers practice their art for a specific length of time. The Institute of Electrical and Electronics Engineers (IEEE) has over 365,000 members and is the world's largest technical professional organization. The IEEE also publishes standards in electrical engineering that are recognized around the world.

Other certifications that may help demonstrate proficiency as an electrical engineer may include software certifications on [AutoCAD](#), as well as a Six-Sigma Black Belt.

Experience

In Electrical engineering, experienced engineers command higher salaries compared to new college graduates. All sizes of organizations value the experience gained from working on successful projects.

Most electrical engineering jobs design systems and processes that may cost millions of dollars to initiate. Companies with very high re-tooling or design costs may require more experienced electrical engineers, or electrical engineers with advanced post-graduate degrees.

Salaries

Salaries for electrical engineering jobs are highly influenced by degrees and experience. Graduates from top universities known for engineering programs generally command a higher salary for electrical engineering jobs compared to graduates from lesser-known programs.

The mid 50% of electrical engineering jobs paid between \$58,660 and \$99,038 per year in 2007. For a Bachelor's of Science electrical engineering new [college graduate position](#), the average salary is under \$58,000 per year. For a newly minted Masters of Science electrical engineer, the average salary is \$69,000 per year. A Ph.D. level electrical engineer starts on slightly above \$86,000 per year.

Conclusion

Electrical engineering jobs will continue to be in demand through the next decade. While the field is not growing rapidly, there are positions available for the current level of graduates from bachelor's programs. As the number of electrical products continues to grow, and the electrical infrastructure needs to be updated or replaced, electrical engineering jobs will continue to be posted.

EmploymentCrossing is the largest collection of active jobs in the world.

We continuously monitor the hiring needs of more than 250,000 employers, including virtually every corporation and organization in the United States. We do not charge employers to post their jobs and we aggressively contact and investigate thousands of employers each day to learn of new positions. No one works harder than EmploymentCrossing.

Let EmploymentCrossing go to work for you.