



## Getting an Environmental Engineering Job

While there are many types of engineering sub-specialties, as well as a variety of companies that employ engineers, one of the segments receiving more interest these days is environmental engineering. With increased interest arising from media coverage of contaminated food, water, and air, the number of potential applicants for environmental programs has increased. **Environmental health and safety jobs** include **environmental engineers** as well as other types of life sciences positions. Environmental engineering positions focus on the issues of air pollution, water pollution, recycling, waste disposal, and public health issues arising from pollutants.

### What Is Involved with Environmental Engineering Jobs?

Environmental engineers work on the problems caused by pollutants and contaminants utilizing principles outlined by chemistry, biology, and biochemistry. Through conducting hazardous waste management research and studies, they evaluate and determine the extent of the hazard. Environmental engineers also provide advice on how to treat and contain hazards, as well as procedures to help avoid accidents.

Environmental engineers may also work with product designers and manufacturing managers to design products and manufacturing processes that reduce the production of pollutants, as well as improve energy efficiency, thus reducing the emission of greenhouse gasses as well as reducing the use of other raw materials in the manufacturing process. Through implementing efficient manufacturing processes that more effectively use raw materials, manufacturing facilities may also experience an increase in profitability.

Recycling of materials begins at the factory. Environmental engineers working with industrial manufacturing or refineries may be responsible for designing systems to reclaim and recycle materials from waste streams. By reducing the amount of waste produced and by reusing any materials that may be returned to the start of the manufacturing process, the total ecological burden of the factory may be reduced through the work of **environmental and safety** engineers.

Through working with other engineers and specialists, environmental engineers work with those responsible for the design and construction of municipal water supply treatment systems, as well as determine testing protocols to monitor water quality. Environmental engineers provide reports to state and federal agencies on the condition and safety of groundwater and surface water.

Because emissions may not be reduced to zero levels using

current technology, environmental engineers routinely design systems and processes that monitor the production and release of any emissions in the air, water, or waste stream. They also have the responsibility of ensuring that wastewater processing, as well as any gas emissions, meets the requirements outlined in any discharge permits issued by local, state, or federal governments.

### Responsibilities of Environmental Engineers

Environmental engineers provide planning and reviews on specific environmental problems, projects, and functions within an environmental area, such as water, air, recycling, or waste management.

Environmental engineers are required to have strong communication skills as well as presentation skills. From time to time, environmental engineers may be required to present findings to governmental and regulatory organizations to review plans for remediation and cleanup of wastes or the design of manufacturing processes.

Environmental engineers also recommend loss prevention plans and measures that are based on the probability of potential harm and damage caused by an environmental event. By working with health and safety engineers, environmental engineers help develop new processes and facility designs to reduce the risk of damage, illness, or injury to workers or the population.

Because environmental engineers must work with other managers, engineers, designers, and operations managers, being able to work across functional organizations is essential. Environmental engineers also participate in or lead technical evaluation boards, as well as moderate and provide knowledge for internal negotiations related to the design and operation of manufacturing facilities within environmental guidelines.

With each project, it is important for the environmental



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engineer to be creative in his or her application of professional knowledge of techniques, methods, and principles to protect the quality of national resources and the environment.

Because environmental regulations are always changing at the local, state, and federal levels, environmental engineers also must study and keep current with all aspects of environmental law. Environmental engineers may also be required to testify on regulations with governmental regulators.

### Educational Requirements and Certifications

Engineers are required to possess at least a bachelor's degree in engineering. Many environmental engineers have also acquired a master's degree or a PhD. Environmental engineers who are in academic positions are required to have a PhD.

All of the fifty states in the United States require licensure for engineers. The title for a licensed engineer is Professional

Engineer (PE). To obtain a license, the applicant must have a bachelor's degree from an accredited program in engineering as well as have four years of work experience. The state also requires the applicant to pass an exam.

### Job Outlook

The amount of press coverage on contaminations and environmental harm has dramatically increased the interest of the public in [environmental jobs](#). Environmental engineering professional positions are expected to continue to grow faster than the rest of the economy through 2016.

In addition, environmental engineering positions have a low potential of being outsourced overseas, as most projects require the engineer to be on the premises of the factory or manufacturing facility.

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