

# ENVIRONMENTAL ENGINEER

ALSO KNOWN AS:

ENVIRONMENTAL CONSULTANT

POLLUTION CONTROL ENGINEER

ECOLOGICAL ENGINEER

SUSTAINABILITY ENGINEER

## CREATE A SUSTAINABLE FUTURE.

At the intersection of technology and nature, Environmental Engineers develop innovative solutions to protect our ecosystems and create a sustainable future.

### KEY SKILLS

Skills which may benefit anyone considering a job as an environmental engineer include:

- ✔ Data analysis
- ✔ Environmentally conscious
- ✔ Risk assessment
- ✔ Engineering design
- ✔ Project management

### CAREER PROGRESSION

In this role, you may have the opportunity to progress to other positions. Career progression opportunities include:

- Chief Executive Officer
- Supply Chain Manager
- Chief Operating Officer
- Chief Engineering Officer

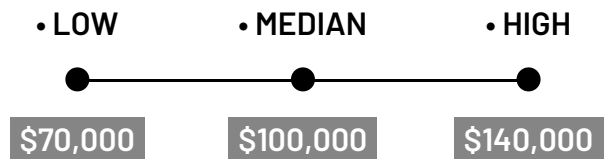
### VALUES & ATTRIBUTES

Values and attributes of anyone considering a job as an environmental engineer include:

- ✔ Environmentally-conscious
- ✔ Ethical
- ✔ Adaptable
- ✔ Innovative
- ✔ Collaborative
- ✔ Enterprising – “Persuader”

### SALARY EXPECTATION

The expected salary for an Environmental Engineer can vary across different areas of manufacturing and may vary as you become more experienced.



### RELATED INDUSTRIES

- ▶ Aerospace and Defence
- ▶ Chemicals, Hydrocarbons and Refining
- ▶ Food and Beverage
- ▶ Furniture and Other Products
- ▶ General Manufacturing and Engineering
- ▶ Laboratory Operations
- ▶ Meat and Seafood Processing
- ▶ Pharmaceutical and Medical Technology
- ▶ Polymers, Plastic and Rubber
- ▶ Printing and Graphic arts
- ▶ Process Plant Operations
- ▶ Pulp, Paper and Packaging
- ▶ Renewables
- ▶ Sustainable Operations
- ▶ Textiles, Clothing and Footwear
- ▶ Timber and Wood
- ▶ Transport Equipment and Machinery

### RECOMMENDED SCHOOL SUBJECTS

- Agricultural Practices
- Agricultural Science
- Engineering Skills
- Mathematical Methods
- Physics

### CORE SCHOOL SUBJECTS

- General Mathematics
- Essential English
- Biology
- Chemistry
- Engineering

## JOB OVERVIEW

Environmental Engineers apply scientific and engineering principles to improve and protect the environment. They work on a wide range of issues, including air and water pollution control, recycling, waste disposal, and public health. Their expertise is crucial in addressing global challenges such as climate change, resource depletion, and environmental degradation.

In the manufacturing industry, Environmental Engineers play a vital role in ensuring sustainable and environmentally responsible production practices. They work closely with production teams to design and implement cleaner manufacturing processes, reduce waste and emissions, and improve energy efficiency. These engineers are instrumental in helping manufacturing facilities comply with environmental regulations, obtain necessary permits, and implement environmental management systems. They also contribute to the development of eco-friendly products and packaging solutions, supporting the transition towards a circular economy.

In their daily work, Environmental Engineers might be found conducting environmental impact assessments, designing waste treatment systems, developing pollution control strategies, or advising organisations on environmental regulations and sustainability practices. They often work in multidisciplinary teams, collaborating with scientists, urban planners, and policymakers.

The role of an Environmental Engineer requires a unique blend of technical knowledge, problem-solving skills, and environmental stewardship. They must understand complex environmental systems, be familiar with environmental regulations, and be able to develop practical, cost-effective solutions to environmental problems.

## WHAT WILL YOU DO?

Your role may include duties as follows:

1. Design systems for water treatment, air pollution control, and waste management
2. Conduct environmental impact assessments for new projects and developments
3. Develop and implement sustainability strategies for organisations
4. Monitor environmental programs and ensure compliance with regulations
5. Research and develop new technologies for environmental protection and remediation
6. Optimise manufacturing processes to reduce environmental impact and improve resource efficiency
7. Implement life cycle assessments for products and processes in manufacturing settings

## HOW TO BECOME A ENVIRONMENTAL ENGINEER

Becoming an Environmental Engineer typically requires a strong educational background in engineering and environmental science. Here are the steps to become an Environmental Engineer:

1. Earn a bachelor's degree in environmental engineering or a related field such as Civil or Chemical Engineering
2. Gain practical experience through internships or co-op programs during your studies
3. Consider pursuing a master's degree in environmental engineering or a related specialisation
4. Obtain professional engineering licensure (e.g., Chartered Professional Engineer status in Australia)
5. Stay updated with environmental regulations and emerging technologies through continuous professional development

## VOCATIONAL EDUCATION & TRAINING

While most Environmental Engineer positions require a university degree, there are vocational education and training options that can provide a foundation for entering the field or supporting roles within environmental management:

- Diploma of Environmental Monitoring and Technology (MSS50222)
- Diploma of Applied Technologies (MEM50822)
- Diploma of Sustainable Operations (MSS50122)
- Advanced Diploma of Engineering (MEM60122)

These courses can provide practical skills in environmental management and sustainability practices, which can be valuable for those entering the field or looking to enhance their environmental knowledge.

## UNIVERSITY & HIGHER EDUCATION

A university degree is typically required to become an Environmental Engineer. Most employers prefer candidates with a bachelor's degree in environmental engineering or a related engineering field with a focus on environmental systems. These programs provide a strong foundation in mathematics, physics, chemistry, and biology, along with specialised courses in environmental systems, pollution control, and sustainable design.

For those seeking to advance their careers or specialise in specific areas of environmental engineering, postgraduate degrees such as a Master of Environmental Engineering or a Ph.D. in Environmental Science can be highly beneficial. These advanced programs often involve in-depth research projects and can lead to leadership roles in industry, academia, or policymaking.

Many universities also offer specialised courses or certifications in areas such as sustainable design, renewable energy systems, or environmental impact assessment, which can be valuable for professionals looking to gain expertise in specific aspects of environmental engineering. For those interested in the manufacturing sector, courses in sustainable manufacturing, industrial ecology, or green chemistry can provide valuable knowledge for implementing environmentally friendly practices in production processes.