

CAREER IN ENVIRONMENTAL SCIENCE

Employment News

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Human beings, thought to be the most intelligent of God's creations, have caused the worst damage to the nature and its harmony. Stratospheric ozone depletion, mangrove destruction, acid rain, loss of biodiversity and tropical deforestation have all come to a point where they seem either irreversible or too costly to mitigate. Negative consequences are there for all to see - sea level is rising, land degradation is apparent, more frequent or intense flooding of river and coastal areas, long-drawn droughts, unpredictable climatic changes have already started affecting us.

Environmental Scientists and Engineers work to measure different environmental factors, offer technical solutions to maintain a sustainable lifestyle and come up with innovative applications of scientific and engineering principles and concepts for environmental modeling and damage control.

Environmental Science careers encompass all the jobs related to researching, monitoring and controlling our atmospheric, terrestrial and aquatic environment. It means that Environmental Sciences and Engineering cuts across various departments to cover microbiology,

atmospheric sciences, climate management, water management, energy management, environmental chemistry, environmental technology, and oceanography. An environmental science degree equips you with essential skills that could lead to a job in the environment sector or in other related



areas.

What is Environmental Science?

Environmental science is a holistic and multidisciplinary field. It is an integration of the physical, biological, and earth sciences, which aims to understand how Earth works and supports life. By identifying Nature's systems, we seek to control and prevent disruption to its processes occurring due to myriad human activities. Saving the environment means not

only saving human health but also protecting several other life forms or species that are on the verge of extinction because of us.

Thus, environmental scientists investigate the source of environmental problems and devise strategies to combat them. It may include working with the industry to reduce waste and pollution, cleaning up contaminated areas, and making policy recommendations for a cleaner and greener planet.

What do Environmental Scientists actually do?

As an environmental expert, you may have to travel around the world or work from home – as the situation demands. Most Environmental Science careers are some kind of a blend between desk job and fieldwork – and focus on written, physical, or mathematical aspects of environmental studies.

To research on pollutants or health hazards, environmental scientists have to determine data collection methods; collect water, air, and soil samples and analyse them; and find correlations to human activities. They also have to prepare reports and presentations to document and explain their findings.

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Some environmental scientists also conduct inspections of businesses and factories to assess whether they are adhering to government rules and regulations or not, keep an eye on the practices they are following, and prevent creation of new environmental hazards.

Some environmental experts specialize in ecological issues while others specialize in potential threats to human health. Water conservation, reduction of carbon footprint, increased use of clean and green energy – all come under the blanket of Environmental Sciences. It is relatively easy to find relevant work experience opportunities since many environmental organizations need help from people willing to carry out unpaid work.

Working in a voluntary capacity in an environment-related role may often be the first step to more specialist, paid employment. Many students get involved in clubs and societies while still at university or take up volunteering roles with conservation organizations, such as The Wildlife Trusts, or become active in campaigning groups in their local area.

Volunteering gives you experience that is difficult to gain elsewhere and shows commitment. Some students attend conferences and debates on environmental concerns, subscribe to relevant magazines and journals, or go travelling. All these experiences may be persuasive to an employer.

Skills and Qualifications Required

Students interested in Environmental Sciences must love Nature, and have good technological as well as communication skills. They should also have the ability to understand a problem, define it well, and be able to collect and analyze data related to it.

To be able to do B.Sc in Environmental Science, you should have PCB (Physics, Chemistry and Biology) in Class 11 and 12. Masters in Environmental Sciences or Biology is almost mandatory to grow in this field.

You can also do B.Tech in Environmental Engineering – for which you will need PCM (Physics, Chemistry and Mathematics) in Class 11 and 12. PCMB (Physics, Chemistry, Maths and Biology in Class 11 and 12 can be an ideal sub-

ject combination for this course.

Studying environmental science provides you with very specific skills according to your particular course or specialist area. You will also develop a broader set of transferable skills, including:

- ◆ research and problem-solving skills;
- ◆ competence in developing arguments from scientific, ethical and philosophical perspectives;
- ◆ ability to plan and manage projects;
- ◆ ability to gather, analyze and communicate complex technical data to others;
- ◆ flexibility to work in all kinds of environments, developed through field-work experience;
- ◆ numerical and IT skills, developed through the application of statistics and measurement techniques;
- ◆ a broad understanding of local, national and global environmental issues.

Top Colleges and Institutes offering Environmental Science and Engineering courses

You can do M.Sc in Environmental Science from:

- ◆ Fergusson College (FC Pune), Pune
- ◆ Dr. B.R. Ambedkar Open University, Hyderabad
- ◆ The Maharaja Sayajirao University of Baroda, Vadodara
- ◆ **Cochin University of Science and Technology (CUSAT), Kochi**
- ◆ Amity University (AU Noida), Noida
- ◆ Panjab University (PU), Chandigarh
- ◆ Veer Narmad South Gujarat University, Surat
- ◆ **Jawaharlal Nehru University, Delhi**
- ◆ Maharshi Dayanand University, Rohtak
- ◆ Guru Jambheshwar University of Science and Technology, Hisar
- ◆ **Indian Institute of Ecology and Environment, Delhi**
- ◆ School of Distance Education-Bharathiar University, Coimbatore
- ◆ Bundelkhand University (BU), Uttar Pradesh
- ◆ North Maharashtra University (NMU), Jalgaon

You can do B.Tech in

Environmental Engineering from:

- ◆ Indian School of Mines (ISM), Dhanbad
- ◆ Delhi Technological University, Delhi

- ◆ L D College of Engineering (LDCE), Ahmedabad
- ◆ Tamilnadu Agricultural University (TNAU), Coimbatore
- ◆ Sri Jayachamarajendra College Of Engineering (SJCE), Mysore
- ◆ Galgotias University (GU Greater Noida), Greater Noida
- ◆ Amity University, Jaipur
- ◆ P.E.S. College of Engineering (PESCE), Karnataka
- ◆ Bharath University (BU), Chennai
- ◆ Adamas University, Kolkata
- ◆ Visvesvaraya Technological University, Belgaum
- ◆ Jaypee University of Information Technology, Himachal Pradesh
- ◆ Andhra University (AU, Visakhapatnam), Visakhapatnam
- ◆ Hindustan College of Science and Technology (HCST), Mathura
- ◆ Assayer Institute, Noida

You can also do:

- ◆ M.Tech in Environmental Science and Engineering from Jamia Millia Islamia, Delhi
- ◆ Post Graduate Diploma in Environmental Pollution Control Technology (affiliated to University of Mumbai's Garware Institute of Career Education and Development) or Sustainable Environment Management from **SIES Indian Institute of Environment Management, Mumbai**
- ◆ BE in Environmental Engineering, M.E. in Heat Power Engineering or M.Tech in Energy Technology from **Rajiv Gandhi Praudyogiki Vishwa-vidyalaya, Indore**

(The list are indicative only)

Career Options Available

An Environmental Science degree opens up several career opportunities for you – each one offering a different kind of lifestyle, work conditions, scope and remuneration.

Government jobs that require **Environmental Policy, Planning, and Management** of ten require intensive research work. **Environmental lawyers** too may have to pour over their desks for long hours – though, they may visit courtrooms now and then. **Soil and Plant Scientists, Ecologists or Microbiologists** may be engaged by government agencies, NGOs, law firms, universities and private companies. **Environment Consultants** help in setting up manufacturing units according to legal specifications, suggest and implement remedial meas-

ures for a particular problem in the area, and setting up a sanitation and hygiene plan.

Horticulturists, Zoologists, Wildlife Conservationists and Foreign Rangers often have a mix of indoor and outwork door which is often limited to a particular location. If you end up being a **Meteorologist or Oceanographer**, you may find yourself tucked away in a laboratory working with advanced computer models or spend your time at sea studying weather and other related subjects.

As an **Environmental Researcher**, you get to investigate health and environmental problems like onset of unexpected or new diseases in a neighborhood, finding solutions to degrading quality of air in a major cities and even the reason of mysterious mutations in various species.

Some **Environmental Science Graduates** embark on further study to train for a particular career path, e.g. teaching or management, while their employer to gain directly relevant professional qualifications supports others. Studying at postgraduate level enhances your employability by increasing your research skills, specialist knowledge and communication skills.

Postgraduate courses may be aimed at developing knowledge of a particular specialised area or entering a sector, such as environmental health, where a postgraduate qualification is an essential requirement.

How much Environmental Scientists Earn?

In India, Environmental Engineers make around Rs 4 to 5 lakh per annum while scientists earn around Rs 6 to 7 lakh per annum on an average. As an Environmental and Health Safety Managers, you can easily make around Rs 10 to 11 lakh per annum.

Many government and non-government agencies, NGOs, firms and colleges employ environmental professionals at various levels. Waste treatment industry, refineries, distilleries, mines, fertilizer plants, food processing industries, and textile meals also engage environmental scientists.

You may also find jobs as an environmental science teacher, journalist, and researcher in various companies. (The Author is a career counsellor based in New Delhi. She can be reached at rruchishrimalli@gmail.com)