

Environmental Science



Environmental engineers develop methods to solve problems related to the environment using the principles of biology, physics, and chemistry. Environmental protection is an important issue both in this country and abroad. Regulations have forced cities, businesses, industries, and governments to direct their attention to cleaning up hazardous waste sites, setting up recycling centers, and seeing that they meet standards for clean air, soil, and water.

Environmental Science as a Major at Notre Dame College

Students in the environmental science program will gain a broad perspective in the physical and life sciences as related to environmental applications and issues. Coupled with an appropriate minor, graduates of this interdisciplinary program will be prepared for careers in environmental areas such as education, ecology, conservation, consulting, monitoring, communication, illustration, and health sciences.

The Bachelor of Arts degree in Environmental Science is designed for students who plan to seek employment in an environmentally related vocation immediately upon graduation. It is not intended to prepare the student for further graduate studies in the life or physical sciences or as preparation for medical, dental, or veterinary programs.

Example of required courses in Environmental Science:

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| CH 111-115 | College Chemistry & Lab |
| CH 211, 213 | Organic Chemistry & Lab |
| CH 220, 221 | Earth Science & Lab |
| CH 308 | Environmental Chemistry |
| CH 381 | Technical Writing |
| BI 110-113 | General Biology & Lab |
| BI 200, 201 | Ecology & Lab |
| BI 260, 261 | Environmental Science & Lab |
| BI 418, 419 | Limnology & Lab |
| MA 221 | Statistics I |
| MA 300 | Statistics II |
| PH 380 | Bioethics |

Work Performed

Environmental engineers devise and carry out measures to prevent, reduce or to repair environmental damage caused by businesses, industries, municipalities, and private individuals. They work to contain, reduce, or prevent hazardous waste, air pollution, or contaminated streams and groundwater.

They design pollution control systems for industry, may design water treatment plants to deliver safe drinking water to municipal residents, design and maintain treatment plants to treat a city's wastewater, and determine the best way to clean up an environmental problem, like a landfill with a leaking liner, an oil spill, a chemical spill, or a polluted lake or river.

Working Conditions

They work at construction sites, in offices, at universities, and in research and testing laboratories. As a rule, environmental engineers work as part of a team. Although most environmental engineers spend the majority of their time in an office, sometimes their work takes them to urban, rural, or industrial settings. Occasionally they work overseas or in remote regions of the country.

They work outdoors in heat, cold, rain, or snow. Their surroundings may be damp, smelly, noisy, or hazardous. Environmental engineers who work on industrial pollution control projects may spend a lot of time in large metropolitan areas.

Personal Qualifications

- Should be creative and have the desire to help others live better.
- Must be alert, patient, responsible, and motivated.
- Should be analytical thinkers with a commitment to the environment and the ability to concentrate on details.
- Must have good oral and written communication skills so that they can explain policies and plans and exchange information with others.
- Should be keen observers, have good judgment, and be able to work well with others.

Professional Organizations

- American Indoor Air Quality Council
- Association for the Environmental Health of Soils
- Environmental Assessment Association
- Environmental and Water Resources Institute of the American Society of Civil Engineers
- American Association for the Advancement of Science
- American Public Information on the Environment

"Acid rain, global warming, automobile emissions, and ozone depletion are some issues that environmental engineers study. By attempting to minimize the effects of these problems, we hope to prolong the life of our planet." **Professor of Environmental Engineering, American Academy of Environmental Engineering, Annapolis, Maryland**

Related Career Titles for Environmental Science Majors

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|----------------------------|---------------------------------|--------------------------------|
| Agricultural Scientist | Agricultural Technician | Air/Water Quality Manager |
| Air Pollution Analyst | Architect | Biochemist |
| Ecologist | Engineering Technician | Environmental Analyst |
| Environmental Consultant | Environmental Educator | Environmental Engineer |
| Forest Ranger | Forester | Fund Raiser |
| Geographer | Geologist | Geophysicist |
| Biologist | Biomedical Engineer | Biotechnologist |
| Chemical Technician | Chemist | City Planner |
| Civil Engineer | Conservation Agent | Conservation Systems Analyst |
| Environmental Engineering | Environmental Health Specialist | Environmental Lawyer |
| Environmental Lobbyist | Environmental Nurse | Environmental Physician |
| Environmental Planner | Environmental Scientist | EPA Inspector |
| Hazardous Waste Manager | Hydrologist | Industrial Hygienist |
| Journalist, Author | Management Consultant | Meteorologist |
| Microbiologist | Natural Resource Specialist | Conservationist |
| Consumer Safety Inspector | Earth Scientist | Oceanographer |
| Outdoor Trip Leader | Park Ranger | Soil Conservation Technician |
| Teacher | EPA Statistician | Fisheries Conservationist |
| Pharmacy Technician | Project Manager | Public Health Veterinarian |
| Urban and Regional Planner | Water/Wastewater Plant Operator | Occupational Safety Specialist |
| Ocean Technician | Range Manager | Resource Economist |
| Seismologist | Wildlife Manager | Zoologist |

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