

## Chapter 1 : Career Paths of Alumni | Earth & Environmental Engineering

*Environmental engineering is a broad term and it actually incorporates many different engineering disciplines in its quest to make the world a more environmentally-friendly place, including mechanical engineering, civil engineering, chemical engineering, automotive engineering and even aeronautical engineering.*

Well, yes they can actually! Environmental engineers are the technical wizards who are researching, developing, designing and producing solutions to environmental issues, from air pollution and water contamination, to fuel consumption and recycling. Where would we be without environmental engineers? What other areas of engineering fall under environmental engineering? You could be specialising in the chemical side of environmental engineering, developing a more environmentally-friendly fuel for companies such as Shell and ExxonMobil; you could be focusing on the mechanical side of things, designing new turbines for a hydroelectric dam; or alternatively, you could be working in the exciting world of automotive engineering, manufacturing the new breed of electric cars. What do environmental engineers do? With growing environmental concerns across the world, the important work of environmental engineers is becoming more and more prevalent. Usually, these guys will be commissioned by governments, large companies and other organisations to help solve specific environmental problems. The majority of environmental engineers work for engineering consultancies and will work on a variety of projects for different clients. Obviously, their responsibilities and activities will vary from project to project. However, they will typically follow the same process. First of all, the environmental engineer will liaise with their client to understand and assess the environmental problem that needs to be solved. They will then conduct meticulous research and develop a technical solution. Once this has been signed off, the design process begins. If the solution is mechanical or structural, this will usually be designed using computer-aided design CAD techniques. If the solution is chemical, this will be designed using advanced chemistry and scientific principles. Once the design has been rigorously tested, production begins. The solution will then be installed and maintained throughout its operational lifecycle. Some environmental engineers may offer consultancy services to companies that are looking to make amendments to existing products. You could be altering anything from food packaging to the blades of a wind turbine. You really would be saving the planet! Take our Career Test Go Jobs.

## Chapter 2 : Environmental Engineer Salary | PayScale

*Career Paths: Environmental Engineering addresses topics including aspects of environmental engineering such as ecosystems, irrigation, water treatment, air pollutants and career options. The series is organized into three levels of difficulty and offers a minimum of vocabulary terms and phrases.*

What Environmental Engineers do: Advise industries or government agencies about environmental policies and standards. Collaborate with environmental scientists, planners, hazardous waste technicians, engineers, experts in law or business, or other specialists to address environmental problems. Coordinate or manage environmental protection programs or projects, assigning or evaluating work. Develop proposed project objectives and targets and report to management on progress in attaining them. Inform company employees or other interested parties of environmental issues. Obtain, update, or maintain plans, permits, or standard operating procedures. Prepare, review, or update environmental investigation or recommendation reports. Provide assistance with planning, quality assurance, safety inspection protocols, or sampling as part of a team conducting multimedia inspections at complex facilities. Serve as liaison with federal, state, or local agencies or officials on issues pertaining to solid or hazardous waste program requirements. Assess the existing or potential environmental impact of land use projects on air, water, or land. Develop or present environmental compliance training or orientation sessions. Develop site-specific health and safety protocols, such as spill contingency plans or methods for loading or transporting waste. Direct installation or operation of environmental monitoring devices or supervise related data collection programs. Provide administrative support for projects by collecting data, providing project documentation, training staff, or performing other general administrative duties. Write reports or articles for Web sites or newsletters related to environmental engineering issues. Advise corporations or government agencies of procedures to follow in cleaning up contaminated sites to protect people and the environment. Assist in budget implementation, forecasts, or administration. Design or supervise the design of systems, processes, or equipment for control, management, or remediation of water, air, or soil quality. Inspect industrial or municipal facilities or programs to evaluate operational effectiveness or ensure compliance with environmental regulations. Monitor progress of environmental improvement programs. Prepare or present public briefings on the status of environmental engineering projects. Prepare, maintain, or revise quality assurance documentation or procedures. Provide technical support for environmental remediation or litigation projects, including remediation system design or determination of regulatory applicability. Request bids from suppliers or consultants. Provide environmental engineering assistance in network analysis, regulatory analysis, or planning or reviewing database development. Develop, implement, or manage plans or programs related to conservation or management of natural resources. Prepare hazardous waste manifests or land disposal restriction notifications. Assess, sort, characterize, or pack known or unknown materials.

What work activities are most important?

Importance Activities Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts. Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards. Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources. Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. Interacting With Computers - Using computers and computer systems including hardware and software to program, write software, set up functions, enter data, or process information. Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. Communicating with Persons Outside Organization - Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail. Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job. Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying

information or data. Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used. Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time. Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events. Estimating the Quantifiable Characteristics of Products, Events, or Information - Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity. Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work. Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems. Provide Consultation and Advice to Others - Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics. Coordinating the Work and Activities of Others - Getting members of a group to work together to accomplish tasks. Thinking Creatively - Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions. Developing and Building Teams - Encouraging and building mutual trust, respect, and cooperation among team members. Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance. Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others. Coaching and Developing Others - Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills. Developing Objectives and Strategies - Establishing long-range objectives and specifying the strategies and actions to achieve them. Judging the Qualities of Things, Services, or People - Assessing the value, importance, or quality of things or people. Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects. Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment - Providing documentation, detailed instructions, drawings, or specifications to tell others about how devices, parts, equipment, or structures are to be fabricated, constructed, assembled, modified, maintained, or used. Monitoring and Controlling Resources - Monitoring and controlling resources and overseeing the spending of money. Resolving Conflicts and Negotiating with Others - Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others. Training and Teaching Others - Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others. Performing for or Working Directly with the Public - Performing for people or dealing directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests. Performing Administrative Activities - Performing day-to-day administrative tasks such as maintaining information files and processing paperwork. Staffing Organizational Units - Recruiting, interviewing, selecting, hiring, and promoting employees in an organization. Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials. Holland Code Chart for an Environmental Engineer.

**Chapter 3 : 5 Lucrative Engineering Careers and Career Paths**

*The Career Cornerstone Center is a non-profit resource center for those exploring career paths in science, technology, engineering, mathematics, computing, and medicine.*

What Environmental Engineers Do[ About this section ] [ To Top ] Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They work to improve recycling, waste disposal, public health, and water and air pollution control. They also address global issues, such as unsafe drinking water, climate change, and environmental sustainability. Duties of Environmental Engineers Environmental engineers typically do the following: Prepare, review, and update environmental investigation reports Design projects that lead to environmental protection, such as water reclamation facilities or air pollution control systems Obtain, update, and maintain plans, permits, and standard operating procedures Provide technical support for environmental remediation projects and for legal actions Analyze scientific data and do quality-control checks Monitor the progress of environmental improvement programs Inspect industrial and municipal facilities and programs in order to ensure compliance with environmental regulations Advise corporations and government agencies about procedures for cleaning up contaminated sites Environmental engineers conduct hazardous-waste management studies in which they evaluate the significance of a hazard and advise on treating and containing it. They also design systems for municipal and industrial water supplies and industrial wastewater treatment, and research the environmental impact of proposed construction projects. Environmental engineers in government develop regulations to prevent mishaps. Some environmental engineers study ways to minimize the effects of acid rain, climate change, automobile emissions, and ozone depletion. They also collaborate with environmental scientists, urban and regional planners, hazardous-waste technicians, and other engineers, as well as with specialists such as experts in law and business, to address environmental problems and environmental sustainability. For more information, see the job profiles on environmental scientists and specialists , hazardous materials removal workers , lawyers , and urban and regional planners. The largest employers of environmental engineers were as follows: Engineering services Management, scientific, and technical consulting services 20 State government, excluding education and hospitals 15 Local government, excluding education and hospitals 9 Federal government, excluding postal service 6 Environmental engineers work in a variety of settings because of the nature of the tasks they do: When they are working with other engineers and with urban and regional planners , environmental engineers are likely to be in offices. When they are working with businesspeople and lawyers , environmental engineers are likely to be at seminars, presenting information and answering questions. When they are working with hazardous materials removal workers and environmental scientists , environmental engineers work at specific sites outdoors. Environmental Engineer Work Schedules Most environmental engineers work full time. About 1 out of 5 work more than 40 hours per week. Get the education you need: Find schools for Environmental Engineers near you! Employers also value practical experience. Therefore, cooperative engineering programs, in which college credit is awarded for structured job experience, are valuable as well. Programs include classroom, laboratory, and field studies. Some colleges and universities offer cooperative programs in which students gain practical experience while completing their education. Students interested in becoming an environmental engineer should take high school courses in chemistry, biology, physics, and math, including algebra, trigonometry, and calculus. Engineering programs are accredited by ABET, and employers may prefer to hire candidates who have graduated from an accredited program. A degree from an ABET-accredited program is usually necessary for a person to become a licensed professional engineer. Important Qualities for Environmental Engineers Imagination. Environmental engineers sometimes have to design systems that will be part of larger ones. They must foresee how the proposed designs will interact with components of the larger system, including the workers, machinery, and equipment, as well as with the environment. Environmental engineers must work with others toward a common goal. They usually work with engineers and scientists who design other systems and with the technicians and mechanics who put the designs into practice. Environmental engineers often

work with businesspeople, lawyers, and other professionals outside their field. They frequently are required to read and understand documents that deal with topics outside their scope of training. Environmental engineers must write clearly so that others without their specific training can understand their documents, including plans, proposals, specifications, and findings, among others. Licenses, Certifications, and Registrations for Environmental Engineers Licensure is not required for entry-level positions as an environmental engineer. Licensed engineers are called professional engineers PEs. A PE can oversee the work of other engineers, sign off on projects, and provide services directly to the public. Each state issues its own licenses. Several states require engineers to take continuing education to keep their licenses. After licensing, environmental engineers can earn board certification from the American Academy of Environmental Engineers and Scientists. This certification shows that an environmental engineer has expertise in one or more areas of specialization. Other Experience for Environmental Engineers During high school, students can attend engineering summer camps to see what these and other engineers, do. Attending these camps can help students plan their coursework for the remainder of their time in high school. Advancement for Environmental Engineers As beginning engineers gain knowledge and experience, they move on to more difficult projects and they have greater independence to develop designs, solve problems, and make decisions. Eventually, environmental engineers may advance to become technical specialists or to supervise a team of engineers and technicians. Some may even become engineering managers or move into executive positions, such as program managers. However, before assuming a managerial position, an engineer most often works under the supervision of a more experienced engineer. For more information, see the profile on architectural and engineering managers.

## Chapter 4 : Environmental Engineers: Career, Salary and Education Information

*May 22, What Career Path Should I Take? 5 Lucrative Engineering Career Paths. 1. Environmental Engineering. With Obama in office, and his emphasis on tackling environmental issues, most folks.*

Comments An environmental engineer is someone who uses the principles of engineering, soil science , biology , and chemistry to develop solutions to environmental problems. They are involved in efforts to improve recycling, waste disposal, public health, and control of water and air pollution. What does an Environmental Engineer do? Environmental engineers conduct hazardous-waste management studies in which they evaluate the significance of the hazard and advise on treating and containing it. They also design municipal water supply and industrial wastewater treatment systems and research the environmental impact of proposed construction projects. Environmental engineers in government develop regulations to prevent mishaps. Some environmental engineers study ways to minimize the effects of acid rain, global warming, automobile emissions, and ozone depletion. They also collaborate with environmental scientists , planners, hazardous waste technicians, engineers, and other specialists, such as experts in law and business , to address environmental problems and sustainability. Environmental engineers typically do the following: Environmental engineers often work with business people, lawyers , and other professionals outside their field. They often are required to read and understand documents that are outside their scope of training. Environmental engineers sometimes have to design systems that will be part of larger ones. They must be able to foresee how the proposed designs will interact with other components in the process, including the workers, machinery, equipment, or the environment. Environmental engineers must be able to work with others toward a common goal. They usually work with engineers and scientists who design other systems and with the technicians and mechanics who put the designs into practice. As beginning engineers gain knowledge and experience, they move on to more difficult projects, and they have greater independence to develop designs, solve problems, and make decisions. Eventually, environmental engineers may advance to become technical specialists or to supervise a team of engineers and technicians. Some may even become engineering managers or move into executive positions, such as program managers. However, before assuming a managerial position, an engineer usually works under the supervision of a more experienced engineer. Find your perfect career Would you make a good environmental engineer? Take the free career test What is the workplace of an Environmental Engineer like? Environmental engineers work in a variety of settings because of the nature of the tasks they do. When they are working with other engineers and urban and regional planners, environmental engineers are likely to be in offices. When they are carrying out solutions through construction projects, they are likely to be at construction sites. When they work with hazardous waste technicians and environmental scientists , they work at specific sites outdoors. When they are working with business people and lawyers, they are likely to be at seminars where they present information and answer questions.

**Chapter 5 : What does an Environmental Engineer do?**

*Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They work to improve recycling, waste disposal, public health, and water and air pollution control.*

Environmental engineers use principles of chemistry and biology to prevent or solve environmental problems. Environmental engineers possess a strong commitment to the environment and they enjoy a career that allows them to improve it. The most successful environmental engineers have backgrounds in math and science and are detail-oriented. Professionals in this field work on issues like wastewater treatment, toxic materials control, and air quality control. Duties vary by project and can include collecting and analyzing data, performing quality control checks, and evaluating and devising solutions for environmental hazards. These online courses are geared towards more experienced students who have mastered basic hands-on training and are ready to explore more advanced theory in the field. According to data from the U. Bureau of Labor Statistics, careers in the field of environmental engineering are expected to grow 15 percent through 2020. As climate change is finally accepted as a reality, there is great impetus around the world to find creative solutions for the environmental problems humans have caused. Environmental engineers will play a crucial role in helping the human race co-exist with the rest of the world in decades to come. Associate degrees and undergraduate certificate programs are less common. Examples of these courses are air pollution engineering, environmental risk assessment, and principles of environmental engineering. In some universities, environmental engineering is a supplementary program to other engineering degrees in civil, chemical, or mechanical engineering. Some colleges and universities offer advanced online certificates in environmental engineering studies. This certificate typically focuses on one aspect of environmental engineering and offers four to five courses in that area. It is not considered a graduate degree.

**Engineering Technician** An engineering technician is an assistant to an engineer or scientist. In the environmental engineering field, he is often responsible for assisting in research, collecting data, maintaining equipment, and assisting in the planning and execution of projects. Engineering technicians usually have an associate degree in engineering technology and are not required to have a license. An engineering technician may be required to work in a hazardous environment, such as dealing with nuclear waste removal or waste treatment.

**Environmental Engineer** Environmental engineers resolve and help prevent environmental problems. They work in many areas, including air pollution control, industrial hygiene, toxic materials control, and land management. The duties of an environmental engineer range from planning and designing an effective waste treatment plant to studying the effects of acid rain on a particular area. An environmental engineer is sometimes required to work outdoors, though most of her work is done in a laboratory or office setting. Career opportunities for environmental engineers exist in consulting, research, corporate, and government positions. Environmental engineers offering their services directly to the public must be licensed.

**Engineering Manager** Engineering managers supervise engineers and support staff. They typically begin their careers as engineers and advance to the managerial level. Engineering managers are responsible for administrative work in addition to supervising staff and engineering projects; these tasks often involve budgeting, creation of policies and procedures, and the hiring and training of staff members. In the field of environmental engineering, most managers hold office jobs, though some may work in a laboratory setting. Engineering managers often receive benefits such as stock options and bonuses. In addition to their engineering degrees, they typically have some business or management training. For example, a sales engineer in the environmental engineering field may be responsible for the sale of air pollution control products to factories. In addition to sales, they often assist with the design and modification of their products based on customer feedback.

**Environmental Engineering Certification, Licensure and Associations** Environmental engineers are strongly encouraged to become Licensed Professional Engineers. Requirements for this licensure vary from state to state, but typically involve: To qualify for licensure, the Accreditation Board of Engineering and Technology must accredit the engineering program you graduate from, so be sure to check this accreditation before enrolling in a degree program. Most

engineers take the first examination, called Fundamentals of Engineering, upon graduation. Experience in the engineering field is the next step on the road to licensure. Different states have different requirements regarding this work experience, so it is important to check with your state on its licensing requirements. Once you have earned the required work experience, you should be able to take the second examination: This examination is specific to your engineering field of expertise. After completion of these steps, you may apply for licensure with the licensing board in your state. When you receive your license, you are considered a Professional Engineer, or P. Licensed professional engineers are the only engineers allowed to offer their services to the general public. You must possess your P. In many states, engineers are required to maintain licensure through completion of professional development hours. Examples of professional development hours include: Attendance at applicable conferences or seminars Published professional papers, articles or books Participation in professional societies College or continuing education credits The amount of professional development hours required for maintaining licensure varies by state. Other Associations and Certification Bodies.

### Chapter 6 : Career Paths: Environmental Science | English for Specific Purpose (ESP)

*Environmental Engineer Career. Job Description: Research, design, plan, or perform engineering duties in the prevention, control, and remediation of environmental hazards using various engineering disciplines.*

### Chapter 7 : Environmental Engineer Career Information and College Majors

*Environmental engineer What you'd do: Using the principles of engineering, soil science, biology, and chemistry, environmental engineers create solutions to environmental problems—like improvements to recycling, waste disposal, public health, and water and air pollution control.*

### Chapter 8 : Career Paths: Environmental Engineering | English for Specific Purpose (ESP)

*After senior engineer/PM (manage staff/projects or deep technical design), you could become a program manager (manage multiple projects), director, or associate engineer, then finally a principal engineer (oversee multiple projects and project managers and staff).*

### Chapter 9 : Express Publishing | (English Language Teaching) ELT Books

*In some universities, environmental engineering is a supplementary program to other engineering degrees in civil, chemical, or mechanical engineering. In these cases, students earn bachelor's degrees in another branch of engineering with a minor in environmental engineering.*