Environmental engineering 10214

Engineering

Environmental Engineering

Engineering is defined as the science based profession by which the physical forces of nature and the properties of

matter are made useful to mankind in the form of structures, machines, and other products or processes at a reasonable cost

of money and time. An engineer is a person trained or skilled in designing and planning the performance of such equipment

as machines and structures and in supervising their performance.

An Environmental (or sanitary) Engineer is concerned with the water and sewage treatment as well as the resi-

dential and industrial wastes. Environmental engineers are trained in preventing, evaluating, and solving environmental

problems. To be successful, environmental engineers must combine technical knowledge with effective communication

skills in day-to-day work and be able to communicate effictively with people of all types if they are to succeed in solving all

of the problems facing them. The protection of rivers and lakes is part of their responsibility. In this profession, a know-

ledge of chemistry and biology must be added to the engineering base. There are many different jobs that the enviorn-

mental engineers have to do. First, there is Water Quality. Protecting the quality of water required for human use and

environmental protection is an important role for environmental engineers. Increasingly severe quality standards for drink-

ing water, wastewater, pollutant, and groundwater require engineers and scientists trained in the theory and practice of

water and wastewater treatment. In addition, environmental engineers must be able to predict the fate of contaminants in

multimedia enironments in order to measure the effects of pollution on humans and ecosystems. Water quality engineering

involves the application of environmental chemistry, microbiology and physics together with modeling and process engin-

eering to address these areas.

Second, there is Hazardous Waste Managment. Many industrial societies produce and dispose of significant

amounts of hazardous materials. In sufficient treatment, storage and disposal have resulted in many uncontrolled contami-

nant releases to the environment. Innovative engineering solutions are needed for liquid, gaseous and solid hazardous waste

streams as well as for contaminated site remediation. It is the job of environmental engineers to understand and solve

these waste problems.

Third, there is Air Quality. Air pollution is a big problem in society today. Environmental engineers solve air pol-

lution problems across a range of scales, with particular focus on indoor environments and urban air basins. They also have

to understand the physical and chemical processes that determine the concentrations, fates, and effects of air pollutants; they

also consider the social context in which engineered solutions must be developed. Environmental engineers also have to

study water and land because air pollution problems cannot be solved without considering impacts on water and land. To

effectively mark resources for the protection of public health and the environment, and to develop effective waste treatment

systems, environmental engineers are often asked to predict the fate and transport of pollutants in air, water, sediments, and

soils.

Last, is Contaminants prediction. To effectively dedicate resources for the protection of public health and the en-

vironment, and to develop effective waste treatment systems, engineers often are asked to predict the destiny and transport

of pollutants in air, water, sediments and soil. Emphasis is placed on the prediction of a pollutants destiny, and transport in

natural systems and the development of concepts that can be used in the design of innovative treatment systems.

Some schools that offer the environmental engineering program are the University of Akron, the University of

Maryland, and the University of Massachusetts. Your best subjects must be math, science, and engineering classes. Each

person develops a personal course of study. They may choose to emphasize air, water, hazardous wastes, etc. Environ-

mental engineering is a four year program. These are the requirements for the Bachelor of Engineering degree program in

environmental engineering: First year; Calculus I, II, III, Intro. to Engineering, General Physics I, II, and Social Science

Electives. Second year; Calculus IV, General Chemistry, Geology for Engineers, and Social Science Electives. Third year;

Highway Engineering I, Environmental Engineering I, Engineering Economy, Systems Engineering, and Hydraulic Engin-

eering. Fourth year; Soil and Foundation Engineering, Soil Mechanics, Civil Engineering Electives, and Structural Design I

and II. These are just some of the basic classes required to obtain a Bachelor of Engineering degree.

The starting salary for an environmental engineer with a Bachelor's degree is around $30-$34, 000; with a Masters

degree it's around $32-$36, 000; and with a Ph. D is around $36-$45, 000. Experts say by the year 2015, the estimated salary

for this occupation will be around $122, 000 per year. National concerns such as cleanup and disposal of hazardous wastes,

air toxins, indoor air quality, ground water contamination, and restoration of disturbed lands are contributing to the growth

in environmental engineering careers. Students entering this field are likely to experience ever expanding employment

opportunities because of these problems facing society today.

Bibliography

" exciting". joe mama. TIME LIFE WHORE.

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