

ENVIRONMENTAL ENGINEERING

Environmental engineering is a job type that is a professional engineering [discipline](#) and takes from broad [scientific](#) topics like [chemistry](#), [biology](#), [ecology](#), [geology](#), [hydraulics](#), [hydrology](#), [microbiology](#), and mathematics to create solutions that will protect and also improve the health of living organisms and improve the quality of the environment.^{[1][2]} Environmental engineering is a sub-discipline of [civil engineering](#) and [chemical engineering](#).

Environmental engineering is the application of scientific and engineering principles to improve and maintain the environment to:

- protect human health,
- protect nature's beneficial ecosystems,
- and improve environmental-related enhancement of the quality of human life.^[1]

Environmental engineers devise solutions for [wastewater management](#), [water](#) and [air pollution](#) control, [recycling](#), [waste disposal](#), and [public health](#).^{[2][3]} They design [municipal water supply](#) and [industrial wastewater treatment](#) systems,^{[4][5]} and design plans to prevent [waterborne diseases](#) and improve sanitation in urban, rural and recreational areas. They evaluate hazardous-[waste management](#) systems to evaluate the severity of such hazards, advise on treatment and containment, and develop regulations to prevent mishaps. They implement [environmental engineering law](#), as in assessing the environmental impact of proposed construction projects.

Environmental engineers study the effect of technological advances on the environment, addressing local and worldwide environmental issues such as [acid rain](#), [global warming](#), [ozone depletion](#), [water pollution](#) and air pollution from [automobile exhausts](#) and [industrial sources](#).^{[2][6][7][8]}

Most jurisdictions impose licensing and registration requirements for qualified environmental engineers.

The word environmental has its root in the late 14th century French word environ (verb), meaning to encircle or to encompass. The word environment was used by Carlyle in 1827 to refer to the aggregate of conditions in which a person or thing lives. The meaning shifted again in 1956 when it was used in the ecological sense, where [Ecology](#) is the branch of science dealing with the relationship of living things to their environment. ^[12]

The second part of the phrase environmental engineer originates from latin roots and was used in the 14th century French as engignour, meaning a constructor of military engines such as [trebuchets](#), [harquebuses](#), [longbows](#), [cannons](#), [catapults](#), [ballistas](#), [stirrups](#), [armour](#) as well as other deadly or bellicose contraptions. The word engineer was not used to reference to public works until the 16th century; and it likely entered the popular vernacular as meaning a contriver of public works during [John Smeaton](#)'s time.