**Job Description of an Agricultural Engineer**

An agricultural engineer works on a variety of projects like forestry, seafood farming (aquaculture), food processing, and farming. They may work to increase refrigeration efficiency and storage capacity. They also develop control systems to improve the comfort and productivity of livestock. Animal waste disposal is another area that an agricultural engineer works in. He or she may have the job of improving efficiency in fertilizer application. They automate harvesting systems into agricultural areas by using computer programming skills with artificial intelligence and geospatial systems.

Agricultural engineers test equipment for reliability and safety and look to modify factors in environments that affect crop or animal production. They work in cooperation with other engineers, consultants, clients, and contractors. An agricultural engineer should have skills in communication, math, problem solving, and analytical skills. Agricultural engineers are often employed by consulting services, federal government agencies, or engineering companies. Some work with agricultural machinery manufacturers as well.

## Agricultural Engineer Career

## Reducing pollution in a farm’s water supply, improving the efficiency of a rural electric power system, discovering a new way to extend the life of a tomato, these are some of the projects an agricultural engineer might work on in the quest to make agricultural operations as efficient and productive as possible.

Most agricultural engineers work in offices, with frequent research visits to farms, labs, or rural areas. They work for government offices, engineering firms, universities, and manufacturers. The ultimate goal for these engineers is to improve crop and livestock production. This career focuses on the design and manufacture of the equipment and facilities needed to reach that goal.

Agricultural engineers examine the impact of plant and food production on the greater environment, and look for ways to reduce negative impacts. Sometimes they even make news headlines with breakthroughs on production techniques, such as genetic engineering and cloning. Agricultural engineers need an aptitude for science and technology, along with good oral and written communication skills. They rely heavily on their ability to recognize and solve problems.

A bachelor’s degree in agricultural or biological engineering is the entry-level education needed. As the world population continues to expand, the need for the work of agricultural engineers will only continue to grow.

## What is an Agricultural Engineer?

Agricultural engineering combines the disciplines of mechanical, civil, electrical, and [**chemical engineering**](https://www.careerexplorer.com/degrees/chemical-engineering/) principles with a knowledge of agricultural principles. An agricultural [**engineer**](https://www.careerexplorer.com/careers/engineer/) is someone who helps to make farming sustainable, safe, and environmentally friendly. He or she analyzes agricultural operations and looks at new technologies and ways of doing things to improve land use, increase yields, and conserve resources.

Agricultural engineers also recommend ways to protect the health, safety and security of workers, animals, and agricultural products.

## What does an Agricultural Engineer do?

Agricultural engineers have much to do as increasing biological discoveries are adopted to farming practices like on-farm energy production. New uses for agricultural waste are becoming evident and crops are yielding not only food, but new byproducts.

Agricultural engineers design equipment and develop methods for land preparation, planting and harvesting. They use automation, precision, and smart or "intelligence" technologies with new and existing equipment. Sensors are used in combination with microcomputers, controllers, artificial intelligence and other software, which optimizes efficiency, sustainability, and the reliability of food, feed, fibre and fuel for the economy.

Agricultural engineers improve on ways to reduce crop loss from field damage during handling, sorting, packing and processing. Warehousing of food and fibre are an important part of the agriculture industry; the agricultural engineer plans the heating, cooling, ventilation, post harvest handling, logistics and more.

**Agricultural engineers work with:**

* Production facilities
* Food engineering and the processing of agricultural products
* The design of agricultural machinery, equipment, and agricultural structures
* The physical and chemical properties of materials used in, or produced by, agricultural production
* Power units, harvesters, material handling, and implements
* Poultry, swine, beef, aquaculture, and plant environmental control
* Waste management, including animal waste, agricultural residues, and fertilizer runoff
* Water management, conservation, and storage for crop irrigation and livestock production
* Utilizing GPS, yields monitors, remote sensing and variable-rate technology
* Worker safety and comfort
* Efficiency including the control of vibration, noise, air quality, heating, cooling, etc.
* Sales, service, training, management, planning, market and product research related to implementing and applying technologies
* Agricultural engineers have distinct [**personalities**](https://www.careerexplorer.com/careers/agricultural-engineer/personality/). They tend to be investigative individuals, which means they’re intellectual, introspective, and inquisitive. They are curious, methodical, rational, analytical, and logical. Some of them are also realistic, meaning they’re independent, stable, persistent, genuine, practical, and thrifty.
* Does this sound like you? Take our [**free career test**](https://www.careerexplorer.com/career-test/) to find out if agricultural engineer is one of your top career matches.

## What is the workplace of an Agricultural Engineer like?

Agricultural engineers work both indoors and out. Their work can depend on the weather or growing seasons, so they sometimes work long hours to take advantage of the right conditions.

An agricultural engineer works with industries associated with agriculture such as equipment companies, seed manufacturers and food companies/distributors. Some agricultural engineers work directly with [**farmers**](https://www.careerexplorer.com/careers/farmer/) and agricultural technicians to solve issues with crop, land and livestock. Large farm operations may consult or hire agricultural engineers to resolve management and technical issues. A good number of engineers work for government agencies that oversee agricultural entities.