

Types of engineering

Engineering is a vast field. Most engineering degrees focus on one specific discipline, though there are some that let you try a bit of everything.

Mechanical

Mechanical engineers design, develop and improve mechanical components and systems that make our world and lives function; everything from power plants and microscale sensors to driverless cars. Disciplines within the mechanical engineering field include aerospace, automotive, computer-aided design (CAD), robotics, and nanotechnology.



Electronic

Electronic engineers research, design, develop and test electronic components, devices and systems for different industries, including aerospace, data communications and robotics. This whole area of engineering is about designing, making, running, and servicing things that people need.



Civil

Civil engineers help shape the world and improve people's lives by designing, creating and maintaining the buildings and large structures that we need. They build all sorts of things – from roads, bridges, dams and tunnels to railways, hospitals, and airports. They also play an important role in rebuilding projects, such as in the event of natural disasters.



Architectural

Architectural engineers construct, plan, and design projects. In conjunction with other team members, they focus on building structure and interior design. They might be involved in areas such as heating, air conditioning, electrical, fire protection, lighting, plumbing and other systems specific to the project.



Environmental

Environmental engineers assess the impact on air, water, soil and noise levels of engineering projects. They also plan and design equipment and processes for the treatment and safe disposal of waste material and assess what may cause problems for the environment in the long-term. Environmental engineering is considered a subset of civil engineering.



Medical

Medical engineers transform and save lives by researching and evolving the innovations that improve our health and healthcare systems, including 3D organ printing, prosthetic limbs, wearable technology, and specialist equipment like wheelchairs.



Electrical

Electrical engineers cover the generation, distribution, application and control of electrical energy. They work on a huge range of things – from wind turbines to railway lines; power networks to battery design. Electrical engineers develop skills and technological knowledge needed to design, assess and improve electrical systems.



Integrated

Integrated engineers have a broad range of engineering skills including aspects of electrical, electronic, mechanical, and manufacturing engineering. Their broad knowledge allows them to work in a wide variety of roles where several skills might be required.



You can study all these areas of engineering at Cardiff University. Other specialist areas include chemical engineering, agricultural engineering, nuclear engineering, marine engineering, biomedical engineering, software engineering and more. Find out more at cardiff.ac.uk/engineering/courses