

Not sure what type of engineering you want to study? Read this

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Everyone excels at different subjects in high school. Some people might have a knack for math, science, or technology. Others may prefer drafting, designing, or working with their hands. But if you enjoy *any* of these things, you may want to consider pursuing a career in engineering.

However, since this is a broad and exciting field that covers everything from building bridges to coding electronics, it’s important that you figure out which type of engineering suits you best. Depending on what you’re interested in, you may not even need to become a full-fledged engineer—there are many jobs that demand similar knowledge without requiring an accredited degree.

Within [the BCIT Engineering programs](https://www.bcit.ca/path/engineering/), for example, you’ll find courses ranging from avionics and aircraft maintenance, to manufacturing and mining, to architecture and interior design. Many are offered as part of a bachelor’s or master’s degree, while others are offered as certificates and diplomas—but they all provide the applied learning you need to enter this exciting field.

The term “engineering” encompasses a lot of diverse disciplines—yet they all have something in common. Ultimately, engineers are the people who know how to use the principles of math and science, along with logic and creativity, to solve problems and benefit society.

Let’s suppose a scientist discovers a new element with unique physical or chemical properties. However fascinating it may be, it doesn’t do much for society until someone comes up with a meaningful use for it. That’s what engineers do, no matter which field they work in—they’re skillful, imaginative problem solvers who make it their mission to turn theory into practice.

Discover what type of engineering appeals to you

Most post-secondary institutions provide studies in four engineering disciplines: civil, mechanical, electrical, and chemical engineering.

These four engineering branches aren’t always mutually exclusive, and sometimes blend together. Conversely, there are also more specialized types of engineering that exist outside of them. Nevertheless, understanding the differences between each will help ensure you’re choosing a post-secondary program that takes you down the right career path.

Civil engineering

Civil engineers are the brains behind the built environments that surround us. They design, approve, and oversee all types of infrastructure and public utilities, including roads, houses, skyscrapers, bridges, tunnels, canals, and dams. Civil engineers are experts in keeping cities safe through sound judgment and innovative solutions—it’s no wonder they’re in such high demand.

**Civil engineering at BCIT:**In addition to degrees and diplomas in [Civil Engineering](https://www.bcit.ca/study/programs/civil), BCIT offers certificates in [Civil Technology](https://www.bcit.ca/study/programs/5430cert) and [Public Works Supervision](https://www.bcit.ca/study/programs/5130acert). But the variety of related programs and career paths is even broader: architects, land surveyors, and construction managers all require some knowledge of civil engineering principles.

Mechanical engineering

Mechanical engineers are more than just mechanics or technicians—they’re masters of complex calculations who apply mathematics and physics in everyday life. They optimize the effectiveness and efficiency of machines and systems, and often invent new ones.

**Mechanical engineering at BCIT:** BCIT offers degrees and diplomas in [Mechanical Engineering](https://www.bcit.ca/study/programs/mechanicalengineering), alongside related engineering disciplines such as [Mechatronics and Robotics](https://www.bcit.ca/study/programs/7340diplt). Other programs that fit within this category include [Technology Management](https://www.bcit.ca/study/programs/8350btech), [Marine Engineering](https://www.bcit.ca/study/programs/2935dipma), and aviation and aircraft maintenance, to name a few.

Chemical engineering

Chemical engineers utilize their understanding of chemistry—and in some cases, biology—to create all sorts of products. So, while chemists might spend their days figuring out how certain molecules bond, chemical engineers take that knowledge and develop something real, like biodegradable plastic or pharmaceuticals.

To that end, their training not only involves chemistry. It often branches into the fields of business, economics, ethics, and environmental studies as well.

**Chemical engineering at BCIT:**BCIT doesn’t offer a degree exclusively focused on this type of engineering. However, there are many subdisciplines and courses that are closely related to it, including [Mining and Mineral Resource Engineering](https://www.bcit.ca/study/programs/8610beng), [Chemical and Environmental Technology](https://www.bcit.ca/programs/chemical-and-environmental-technology/), [Biomedical Engineering Technology](https://www.bcit.ca/study/programs/5050diplt), and [Environmental Engineering Technology](https://www.bcit.ca/study/programs/8060btech).

***SEE MORE:***[*What’s the difference between a polytechnic and a university?*](https://commons.bcit.ca/news/2018/12/difference-between-polytechnic-and-university/)

Electrical engineering

Electricity powers pretty much everything we do, which means everyone counts  on the expertise of electrical engineers. Whether they’re designing computer circuits or power grids, generators or software programs, electrical engineers use electromagnetism to make things work.

Some like to work hands-on, creating their own circuits and electrical components, but many advanced electrical engineers spend their time drawing designs and schematics and making highly technical calculations.

**Electrical engineering at BCIT:**In today’s tech-driven world, electrical engineers are a huge asset, and BCIT offers degree and diploma programs in [Electrical Engineering](https://www.bcit.ca/study/programs/electricalengineering). There are also other engineering opportunities in this branch, including [Power and Process Engineering](https://www.bcit.ca/study/programs/2430dipma), telecommunications systems, and [Building Science](https://www.bcit.ca/study/programs/m100meng).

Every type of engineering can lead to a great education and an exciting career, so it comes down to knowing what you enjoy doing. We can help you figure it out. [Contact us](https://www.bcit.ca/admission/contacts.shtml) today or [register for an upcoming information session](https://www.bcit.ca/infosessions/).

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