

What is the difference between a B.Sc. in Computer Science and B.Sc. in Software Engineering?

The School of Computer Science, in the Faculty of Science, offers two majors - a Major in Computer Science and a Major in Software Engineering. We have professors who are specialists in both areas, with lots of exciting courses to choose from. So, which major is better for you? In fact, both programs share some common core courses which provide the foundations of computer science. Note Honours programs are also available in Computer Science and Software Engineering.

The main difference is that the Software Engineering program contains a larger set of required courses concerning the principled design and development of software. See our [Program Page](http://www.cs.mcgill.ca/academic/undergrad/program) for more information at <http://www.cs.mcgill.ca/academic/undergrad/program>.

If you are entering McGill from a high school, you may not have to decide which you prefer right away. You can start with the introductory courses that are common to both programs and then decide which you prefer.

If you are entering McGill from CEGEP, then you will be asked to specify a major when you apply. However, there is still quite a bit of flexibility and you will have some time to decide which you prefer. If you are accepted to McGill in the Faculty of Science you can change your major from Computer Science to Software Engineering (or vice versa) when you actually register at McGill, and you can even change it after you have taken some introductory courses.

What is the difference between a B.Sc. and a BEng degree in Software Engineering?

Students in both programs have a wide variety of job opportunities and access to internship opportunities. Both the B.Sc. and B.S.E programs in Software Engineering share a common core of software engineering courses. The big difference is in the courses to be taken outside of this common core.

The B.Sc. degree is structured so that students have some flexibility to take more courses on computer science or software topics which interest them. They also have the option to take 7 or 8 elective courses which gives an opportunity to take further higher-level software courses or to pursue a minor program in another field (like from Arts, Sciences or Management). With the B.Sc. degree students will learn all about Software Engineering and whatever else interests them. For students coming from CEGEP, the B.Sc. degree fits into 90 credits and can be completed in three years.

The B.S.E. degree is structured so that in addition to courses specific to Software Engineering, students must also take many engineering-specific courses that are common to the Engineering degrees, plus more courses related to hardware. For example, students in the B.S.E. program must take required courses such as Fundamentals of Electrical Engineering, Circuit Analysis, Fundamentals of Signals and Systems, and so on. Since the Engineering courses require more credits, there is less flexibility for taking more software courses, and much fewer electives. The inclusion of all of these extra engineering courses also means that students must take more total credits. For students coming from CEGEP, the B.S.E. degree is 115-119 credits, meaning that it takes at least 3 1/2 years to complete. Program credit weight for out-of-province students: 137-141 credits. Students graduating from this program are eligible for registration as professional engineers, since the program has been accredited by the Canadian Engineering Accreditation Board.

What is the difference between a B.Sc. in Computer Science and a BEng degree in Computer Engineering?

The School of Computer Science (in the Faculty of Science) offers degrees in **Computer Science**, whereas the Faculty of Engineering offers a degree in **Computer Engineering**. It is important for you to understand the difference, so that you can apply to the correct Faculty.

A **Computer Science degree** is more suitable for students more focused on the foundations of computer science and the development of software, or students who would like to combine their studies with mathematics or physics or with a wide variety of minors in Science, Management, Marketing or Arts. Within a Computer Science degree you have a lot of flexibility to learn about many areas of foundational and applied topics as it relates mostly to software. As just one example, you could choose selections of courses to prepare for a career in [games development](#).

The important point is that you will have a lot of flexibility to create an academic program that really interests you.

A **Computer Engineering degree** is suitable for students who want core engineering courses and prefer to specialize more in computer hardware than in computer software. The Engineering degree programs have significantly less flexibility for combined studies and many fewer courses relating to software. Program credit weight for Quebec CEGEP students: 111-115 credits. Program credit weight for out-of-province students: 133-137 credits.

Students interested in a Computer Science degree should apply to either the Faculty of Science or Faculty of Arts, as outlined above.