Concordia University | GINA CODY SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Department of Computer Science and Software Engineering

Differences between the Computer Science and Software Engineering programs

The Computer Science and Software Engineering undergraduate programs at Concordia University both include basic concepts of mathematics, programming, algorithms, and data structures. During the first yearof study, there are not many differences between the programs. They differ in their more advanced components.

Computer Science is a three-year program leading to the degree *Bachelor of Computer Science*. Computer Science is a discipline with many areas including the theory and practiceof programming; algorithms; data structures; distributed systems; databases; networks;artificial intelligence; numerical analysis; and computer graphics. After completing the requiredcore of general courses, you will choose elective courses which may be taken from one of our specialization lists. Our technical elective courses provide the theoretical and practical knowledge that you will need to work as a computer scientist in software testing, design, development, or research. The specialization lists include artificial intelligence, computer games, data analytics, and web services and applications.

Consider the Computer Science program if you like the technical aspects of programming; prefer working by yourself or as a member of a small team; hope to work for a smaller, technically-oriented company; or intend to do research in computer science.

Software Engineering is a four-year program leading to the degree of *Bachelor of Engineering (Software Engineering).* It is accredited by the Canadian Engineering Accreditation Board, which makes it easy for you to become a Professional Engineer (P.E.) after graduating.As a P.E., you will have opportunities to participate in large projects and be given extra responsibilities. The software engineering program contains technical material, including programming, but also trains you to be an engineer. Many courses focus on various aspects of large-scale software development: processes, specification, architecture, design, implementation, maintenance, and project management. Other courses address the "soft skills" that engineers must possess, such as technical writing; communicating; working in a team; and leadership. A number of courses involve working as a member of a team, and the program culminates with the Capstone Project, a large-scale software development project completed during the fourth year by a team of six students. As part of the program, you have to choose a group of technical electives, which may be taken from one of our specialization lists. The specialization lists include real-time, embedded and avionics software, computer games,data engineering, and web services and applications.

Consider the Software Engineering program if you are interested in the large-scale software used in telecommunications, health care, aerospace and automotive industries, banking, and Internet technologies; you like working on big projects as a member of a larger team; you would like opportunities to take responsibility for software that has an impact on society.