

Skills and Innovation in the Digital Technology Sector

Colleges and institutes drive digital innovation

This fast-moving sector is dependent on a well-trained workforce able to adapt to new and emergent technologies. With a flexible and employment-focused approach to teaching, colleges and institutes are at the forefront of preparing Canadians to work in digital technology. They also facilitate knowledge transfer to the industry thanks to cutting edge applied research projects.



Education and Training

By working in close collaboration with industry, colleges and institutes are able to adapt their programs quickly to new labour-market needs. Nowhere is this more relevant than in the digital technology sector where changes are rapid and exponential.

Over **130,000** companies in Canada are involved in the digital technology sector¹



CICan member colleges and institutes across Canada offer over **890** programs relevant to **digital technology** leading to a **variety of credentials**, including:

360+
Diplomas

230+
Certificate Programs

70+
Degrees²

220+
Post-graduate Certificates or Diplomas

5+
Masters Degrees

Popular Programs



Coding and the Web

- Computer Programmer
- Computer Programmer Analyst
- Internet Applications and Web Development
- Web and Mobile Computing



Digital Media

- Animation 2D/3D
- Game Development, Game Programming
- Interactive Media Design, Interactive Media Management
- Digital Media, Digital Cinematography
- Graphic Design



Information Technology

- Information Systems Security, Information Security Management
- Information and Library Technologies
- Computer and Network Technician
- Networking Infrastructure Analyst

Applied Research and Innovation

Colleges and institute are always looking to integrate the latest technologies to ensure students are employment-ready. This also makes them an ideal testing-ground for new digital technologies, where companies can access valuable facilities and expertise.

Over **50 college-based research centres and laboratories** are dedicated to improving digital technologies across the country. This includes centres such as:



Seneca's (ON) Centre for Development of Open Technology (CDOT) provides a physical and virtual environment for the development and research of Open Source products in collaboration with the Open Source community, businesses, and partner institutions.



New Brunswick Community College (NB) is the home of the **Mobile-First Technology Initiative**, which conducts research and works collaboratively with partners in the information and communications technology sector to develop advanced mobile first technology.

There are currently over **95 applied research projects³ in digital technologies** in colleges and institutes across the country. All are conducted in collaboration with local businesses and employers, the majority being small or medium-sized enterprises. Examples include:



Red River College (MB) is assisting Manitoba small-to medium-sized enterprises in adopting digital technologies to increase their productivity, with a focus on the construction and manufacturing sectors.



The **British Columbia Institute of Technology (BC)** and Siemens Canada have entered into a long-term agreement that focuses on research and commercialization opportunities in smart grid cybersecurity and microgrids. This will help identify and pursue the application of new technologies in these growing markets.

Spotlight

As early adopters, colleges and institutes are ideally placed to test the **latest technologies** and help address common challenges encountered in different industries.

Cégep André-Laurendeau's (QC) OPTECH

worked with Optina Diagnostic to improve the camera that takes detailed digital images of the eye to detect issues much earlier.

A virtual thermostat developed through research at **Southern Alberta Institute of Technology (AB)** could allow building managers to have wireless control of heat throughout large facilities.

¹Using the North American Industry Classification System (NAICS), we include in Digital Technology the Telecommunications, Specialized Design Services, Internet Publishing and Broadcasting, and Web Search Portals, Software Publishers, Computer Systems Design and Related Services, Advertising and Related Services, Electronic Shopping and Mail Order Houses, and Computer and Electronic Product Manufacturing sectors. See Industry Canada. "Canadian Industry Statistics," <https://www.ic.gc.ca/app/scr/app/cis/search-recherche> for details (accessed Summer 2017).

²Includes degree pathways.

³Research project data taken from Colleges and Institutes Canada's "Applied Research Survey," 2015-16.

