ICT and Networking Courses Prepare and Inspire Future Innovators

Today, 2 billion things are connected over the Internet. Experts say that by 2020 more than 37 billion organic and inorganic connections will be made. This rapid increase is called the Internet of Everything, which demands a technology-adept workforce across all fields and disciplines.

Cisco Networking Academy provides information and communication technology (ICT) and networking courses to high schools, community colleges and universities globally. Students learn how to design, build and secure intelligent networks, while developing soft skills like leadership, collaboration and entrepreneurship. Classroom instruction, online learning, interactive games, simulations, and hands-on practice are continuously refreshed and aligned with technology education standards.

More than 1 million students are enrolled in Networking Academy courses around the world, preparing to become the innovators of tomorrow.

The Impact in British Columbia

1,837
Students taught in 2013-2014

13,810
Students since inception

19
Organizations offering Cisco ICT courses

$6.65 Million
Estimated in-kind contribution to education

1+3=
36
Instructors preparing the ICT workforce

you + networks = impact
Innovative Technology Education for All Education Levels
Cisco Networking Academy offers a comprehensive teaching and learning program licensed free to not-for-profit organizations, including course content, lab exercises, simulation software, gaming, interactive teaching guides, assessments, and grade books. All teaching materials are available online with 24-hour support.

Cisco Networking Academy courses are designed for secondary, post-secondary, and professional development education programs.

ICT and Networking Courses Engage Students
Students acquire the basic-to-advanced ICT and networking expertise needed by every business, school, hospital, nonprofit, and other organization that relies on intelligent networks to keep them running and secure.

Courses include IT Essentials, Linux Essentials, Cisco CCNA® Routing and Switching, CCNA Security, and Cisco CCNP®. Supplemental courses cover voice, cloud, healthcare IT, and more.

The hands-on instructional approach using real-world scenarios encourages student engagement, and increases their ability to synthesize what they learn for application in other contexts.

Students strengthen their understanding of technology, math, science, and engineering concepts, which improves their success in advanced studies and prepares them for globally-recognized certification exams.

21st Century Career-Ready Skills
Courses integrate skill areas identified as critical for 21st century professionals:

- **Problem solving and decision making**: Students configure and troubleshoot networks based on real-world scenarios.
- **Creative and critical thinking**: Students synthesize what they learn and apply it in other contexts.
- **Collaboration, communication, and negotiation**: Students acquire teamwork and leadership skills through group projects.
- **Intellectual curiosity and information handling**: Students develop the ability to evaluate, structure, and present information clearly.

Courses prepare students to reach their full potential in new or existing careers, or to establish their own businesses.

Professional and Community Development
Unique to the program are support communities for both instructors and students. Instructors receive training prior to teaching their first class, and ongoing professional development opportunities.

Cisco hosts peer communities that enable instructors to collaborate and share best practices in person and online. Students take part in skills competitions, and access a global network of peer mentorship for coursework and exam preparation.

“Black Box Network Services partners with academy schools to provide students with internships, job shadowing, and job offers. Cisco does an exceptional job preparing students to excel in today's business environment. Our academy hires have added immediate impact to our clients' initiatives, and continue to excel by achieving advanced certifications.”

– Talent Acquisition Manager

“What the [technology] workforce needs now are those who can present what they are doing to people who are not in IT. Along with tech skills, they certainly need business skills as well.”

– Networking Academy graduate
High Demand for ICT and Networking Skills
Networking is expected to be the second fastest growing ICT specialization in the United States and Canada.

2020 Employment Projections

<table>
<thead>
<tr>
<th>Specialization</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network and Computer Systems</td>
<td>+ 28%</td>
</tr>
<tr>
<td>Architects/Admins</td>
<td></td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>+ 22%</td>
</tr>
<tr>
<td>Specialties</td>
<td></td>
</tr>
<tr>
<td>Computer Network Support Specialists</td>
<td>22%</td>
</tr>
<tr>
<td>Computer Systems Analysts</td>
<td>18%</td>
</tr>
<tr>
<td>Information Security Analysts</td>
<td>18%</td>
</tr>
</tbody>
</table>

2020 Employment Projections

1 Source: Information and Communication Technology Council (ICTC), www.ictc-ctic.ca/?page_id=9177

Top Canada Cisco Certifications by Salary
ICT salaries are on the rise, particularly for professionals with specialized training or certification. For example, Cisco network administration knowledge and skills result in a 9% higher salary on average.

- CCNA® Certified Network Associate - Voice: $92,837
- CCNP® Certified Network Professional: $97,296
- CCDP® Certified Design Professional: $107,878

Additional Cisco certifications are available, including CCNA Security, CCNA Voice, CCIE, CCDA, and more.


The Impact in British Columbia
The partnership between Cisco and British Columbia education institutions has touched the lives of many students and generated a large estimated in-kind contribution towards education.

Impact since program inception in 1997

- 13,810 Students
- $6.65M Estimated In-Kind Contribution Value

Impact over the last 12 months

- 1,837 Students
- 9% Female Students
- 36 Instructors
- 19 Academies
Impact Profile 2015

British Columbia

<table>
<thead>
<tr>
<th>Education Levels</th>
<th>Secondary Schools</th>
<th>Community Colleges</th>
<th>Universities</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>Students</td>
<td>20%</td>
<td>46%</td>
<td>34%</td>
<td>1%</td>
</tr>
<tr>
<td>Academies</td>
<td>47%</td>
<td>32%</td>
<td>16%</td>
<td>5%</td>
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</table>

Curricula<sup>4</sup>

<table>
<thead>
<tr>
<th>Students</th>
<th>Basic ICT</th>
<th>Basic Networking</th>
<th>Intermediate Networking</th>
<th>Advanced Networking</th>
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<tbody>
<tr>
<td></td>
<td>30%</td>
<td>48%</td>
<td>13%</td>
<td>9%</td>
</tr>
</tbody>
</table>

3 Community-based organizations, middle schools, military, nontraditional educational settings, and post-graduate institutions
4 Students that enroll in more than one education level or curriculum in 12 months may be counted more than once

<table>
<thead>
<tr>
<th>CITY</th>
<th>SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbotsford</td>
<td>Abbotsford Virtual School</td>
</tr>
<tr>
<td></td>
<td>University of the Fraser Valley</td>
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<tr>
<td>Burnaby</td>
<td>British Columbia Institute of Technology</td>
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<tr>
<td></td>
<td>Burnaby South Secondary School</td>
</tr>
<tr>
<td>Chilliwack</td>
<td>Sardis Secondary School</td>
</tr>
<tr>
<td>Coquitlam</td>
<td>Heritage Woods Secondary School</td>
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<tr>
<td></td>
<td>Pinetree Secondary School</td>
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<tr>
<td></td>
<td>Riverside Secondary School</td>
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<tr>
<td>Delta</td>
<td>Delta Secondary School</td>
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<tr>
<td>Duncan</td>
<td>Cowichan Secondary School</td>
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<tr>
<td>Kelowna</td>
<td>Okanagan College</td>
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<tr>
<td></td>
<td>Rutland Secondary School</td>
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<tr>
<td>Mission</td>
<td>Riverside College</td>
</tr>
<tr>
<td>Nelson</td>
<td>Distance Education School of the Kootenays</td>
</tr>
<tr>
<td>Surrey</td>
<td>Kwantlen Polytechnic University</td>
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<tr>
<td>Vancouver</td>
<td>British Columbia Institute of Technology-High Tech Professional</td>
</tr>
<tr>
<td></td>
<td>Killarney Secondary</td>
</tr>
<tr>
<td>Vanderhoof</td>
<td>College of New Caledonia</td>
</tr>
<tr>
<td>Victoria</td>
<td>Camosun College</td>
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Impact Story: Football Coach Inspires Girls Team to Compete in CyberPatriot

So you’re a high school girl. You’ve heard about the Cisco Networking Academy program, but you’re not a computer geek. Who’s going to encourage you to enroll in a class? The football coach.

Wait … who? Sisler High School is the largest in Manitoba, and earning major recognition:

- Nine teachers have won Prime Minister’s Awards for Teaching Excellence — more than any single school
- Sisler students have won the Harry Hood Memorial trophy 12 times (for student athletes who demonstrate outstanding scholastic and citizenship abilities) — more than any other school in the province
- Since 2002, Sisler has had the highest number of students per year selected to participate in Shad Valley (a nonprofit program for exceptional high school students)
- Sisler has been recognized for its educational programs around genocide, specifically for its In Exile for a While program, a refugee camp simulation experience sponsored by the Canadian Red Cross
- Earned C21 national award for distinctive achievement in the field of 21st Century learning and innovation

Cisco is one of only five companies that provide more than half of the total amount given to education by private foundations and corporations.

Education for All Global Monitoring Report
Charles (Baz) Bazilewich, a former Sisler student and star athlete, was invited back to coach the football team in 2004. “Football was my passion. At that time, I didn't own a computer, and I had zero interest in learning about computers.”

So it was surprising when the school principal suggested he consider teaching technology. The principal pointed out this would offer better pay and job security. Baz had so much respect for the principal’s opinion that he looked into it. “As soon as I did, doors kept opening. I started to see the relevance of technology to the health and well-being of society, and how it’s changing the way we’re working, living and playing.”

Baz started by taking technical courses himself at the local college, which happened to have a Cisco Networking Academy program. Then he went on to get his Bachelor of Education (B.Ed). He became an academy instructor, completing the requirements to teach routing, switching and security, and soon the CCNP stream. When he proposed starting a Networking Academy program at Sisler, he had the administration’s complete support.

The Sisler Network & Cyber Security Academy offers IT Essentials, CCNA Routing & Switching, and CCNA Security courses. They also prepare students to take the CCENT or CCNA certification exam in order to become entry-level networking technicians.

Sisler also offers some Microsoft courses. “We want to foster the critical thinking needed to design, deploy and manage a complete business infrastructure, including servers and the application layer. We want our students to develop a big picture view of what's happening in 21st century business networks.”

One of the things Baz implemented is dual credit with nearby Red River College and the University of Winnipeg. He wanted to save students time and tuition costs by enabling them to complete college credit at the high school level.

**Inspiring More Girls to Take Technology Classes**

As part of the program, Baz and Rober Esposito, the new academy instructor, encourage students to participate in extracurricular activities that leverage their technology expertise for social good. One such activity centered around cyber bullying and promoted proper social media habits. Academy students organized a powerful live videoconference with a parent whose teenage daughter had committed suicide after being cyber bullied. The videoconference reached over 5,000 students across Manitoba.

When the school administration saw the impact of the program, they asked Baz and his instructors if they could find creative ways to encourage more female students to take academy courses. Baz conferred with his own personal coach (his wife) for advice on what female students might respond to. “We knew that technology courses are viewed as very hands-on and technical. But she encouraged me to stress the creativity and problem-solving that is so much a part of networking and cyber security.”

“I also tell them that they are likely to have more opportunities in any area of business if they also have some technology training. Their resumes are going to stand out from others who don’t. They may not be interested in IT as their primary career focus, but what they learn in academy courses will help them in sales, product management, and virtually any function or industry.”

Baz believes that getting more girls into the classroom elevates everyone’s game. “Over the years, it’s become clear that the academy program benefits greatly from female students. They bring a focused approach to the chaos of technology. They bring a different way of strategizing and problem-solving. With my athletic background, I’m wired to create the strongest team possible, and female students help make every class much stronger.”
Putting Together an All-Girls Team

Something else helps engage female students: the CyberPatriot skills competition, a national youth cyber education program created by the Air Force Association. Teams compete within their state, province and region, and the top teams compete in a national competition in Washington, D.C.

Several teams from Sisler have participated for the past 3 years, some placing in the top 5% in D.C. Last year, Baz was able to add an all-girls team. Training for the competition is available for credit. Each team has a leader, but everyone on the team develops leadership skills. “This is where my coaching skills really come in handy!”

Baz finds that female students excel in the competition. “Their strengths at strategizing and collaborating are perfect for these challenges. The competition reinforces teamwork and mentorship. These are all skills they take back into the classroom and into their professional careers. It’s exactly like preparing for a game. You do your homework, prepare, practice, and then apply everything you’ve learned on game day. The students and I like to joke that we’re running an NCAA Division I cyber security program.”

This year, 5 of the 6 Sisler teams, including the all-girls team, finished in the top 30% of the 2,150 teams competing in the CyberPatriot competition. The Sisler grade 12 boys team finished 5th in the national competition.

Manitoba Invests in Networking Program

Sisler’s high placement in CyberPatriot, college dual credit, the inclusion of a strong security program, and the job placement success of academy graduates has brought Sisler’s Networking Academy program to the attention of the provincial government.

In November 2014, Manitoba announced it is investing $300,000 in Sisler High School to upgrade classrooms, install new network equipment, and create a cybersecurity virtual data center. Commenting on the award, the Premier of Manitoba, Greg Selinger, said, “Expanding Sisler’s cybersecurity academy will give more students some of the most advanced learning opportunities in Canada. It will provide them with advanced placement at universities and colleges, and give them the skills and knowledge they need to access real-world job experience.”

Baz now has the title of Senior Years Technology Education, Network and Cyber Security. The Senior Years Technology Education is a program under the Manitoba Department of Education. In addition to the eight course network and cyber security vocational cluster, Sisler will add a cluster of several courses that emphasize cyber security. They’re currently working on the curriculum development, and the courses will start in 2015.

‘Hire’ Learning: a Dual Emphasis on Employment and Lifetime Learning

Of the students who have completed the Networking Academy program, 14 have secured jobs. The school is working on developing closer relationships with local companies like MTS, EPIC, Seccuris and Octipi Managed Services to get more paid internships for students, and develop relationships with recruiters that will lead to hiring more Sisler students.

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“I earned my teaching degree while I was working full-time, so I encourage my students to consider taking jobs right out of high school,” says Baz. “If you get a job out of high school, your employer may pay for some of your secondary education, so you can avoid massive student debt. Distance learning makes it easier for graduates to work and still continue their education online. It’s a different model that will make a lot of sense to students these days.”
To help give them more options, Sisler allows students to come back until age 20 and take up to 4 credit hours. “We don’t want students to feel pressured to take jobs right away, or go to college if they don’t feel ready. If they need time to take a few courses, work on their resumes, and figure out what they want to do, we want to give them that time.”

“This year we have over 140 students enrolled in the program. Last year we had more female students enroll than in prior years. But we’re going to keep trying to get those numbers up. I’m big on goal-setting, and I want to have 2 all-girls CyberPatriot teams next year.”

One reason that Baz is confident about recruiting more girls for the academy is that the girls who are already in the program are going to be enthusiastic ambassadors. “I’m counting on them to help us recruit other girls. Tiffany Goddard was one of the first female students to finish the Networking Academy program. She went on to college and got a technology job immediately. In her spare time, she comes back to help mentor the all-girls CyberPatriot team. That’s the cycle I want to build on.”

Baz has other ambitions for the program, including creating a new cyber security competition in Canada that will attract teams from every province, at every education level, whether or not they are already Networking Academy schools.

Baz saw a transformation in himself, from his own education background to what he is accomplishing for himself and his students now. “I had a poor GPA in high school because I didn’t apply myself. I didn’t get one compulsory credit in Grade 12, but I had a full football scholarship. That’s just the type of student I was: invisible and knew everything there was to know, especially that football was going to pay my bills. I didn’t get it. The Cisco Networking Academy gave me the confidence to get my first Cisco certification, and now after years of college and University post-secondary education, I’m working on my graduate studies in education. It gave me the confidence to actually get this all started, which is the honest truth. So whatever I can do to help these students, I’m all in.”

Watch the video on Sisler High School Security Academy:  http://youtu.be/xBHM1XmYf-M

Learn More
See videos and more impact stories. Learn how to get involved.  www.cisco.com/go/netacad/usc
Cisco Corporate Social Responsibility (CSR)

Cisco CSR efforts are aligned with five focus areas, as illustrated. Cisco Networking Academy is a Society program and Cisco’s largest in education.

Cisco In-Kind Contribution Value (IKCV) comprises product donations and pro bono services. Cisco assesses IKCV at fair market value defined by the IRS as the price that inventory, products, or certain professional services would garner on the open market between a company and its direct customers/clients.

<table>
<thead>
<tr>
<th>All Cisco CSR IKCV – Canada</th>
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</thead>
<tbody>
<tr>
<td>12 months (11/1/13-10/31/14)</td>
<td>$6,425,110</td>
</tr>
<tr>
<td>Since 2007</td>
<td>$23,720,147</td>
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