Computer Systems Technology

Diploma Full-time School of Computing and Academic Studies

Overview

The Computer Systems Technology (CST) Diploma program combines computer systems theory with hands-on practical experience in software development. This diploma is a widely recognized credential that employers highly regard. You'll emerge with the well-rounded skills essential for a career analyzing, designing, and developing software solutions.

Delivery: in person. See details.

Note: Application deadline extended to October 18th – it's not too late to apply for January entry!

In two years, you'll learn software engineering and programming from industry professionals, and gain experience working on real projects, from concept to deployment. In your second year, specialty options and industry projects add depth to further hone your skills.

About the program

- Work through this intensive, 2-year full-time program with your cohort, sharing your experience and expertise, and building a professional network that will last long after you graduate.
- 2 intakes: September & January
- Monday to Friday, 8:30 am until 5:30 pm heavy workload; we recommend students do not work during school terms
- First year sets the foundation with the core skills you'll need as a professional software developer check out some first-year app projects [1]
- Second-year options allow you to further your skills in specialty areas
- Work on at least two industry projects with real clients from industry [2]
- Co-operative Education option for broader applied experience (competitive entry)
- Engage with an active student community, clubs, and events
- Excellent job placement rate upon graduation

See the <u>Program Details [3]</u> to learn more about what you can expect from CST, and how you can prepare for a wide variety of career options in the IT industry.

Who should complete the CST Diploma?

This program might be for you if:

- You're interested in software development
- You enjoy problem-solving, often in teams
- · You're enthusiastic about using technology, computers, and software systems to make things better
- You're ready to apply yourself to prepare for a career in the evolving and rapidly expanding Computing and IT sector

If any of these sound like you, please check the <u>Entrance Requirements [4]</u> to ensure you can apply and start your new IT career!

What Computer Systems Technology grads can do?

By earning your BCIT Diploma, you'll be honing your IT skills and gaining knowledge of various industry-recognized technologies, preparing you for positions in multiple industries and locations.

As a CST graduate, you'll be able to:

- Participate in all aspects of software development and maintenance
- Contribute and communicate effectively as a member of software project teams
- Design and code with widely-used programming languages and scripting tools, such as JavaScript, Java, C, C# and C++
- Develop and maintain complex software systems that integrate scalable components, such as Cloud Computing
- Apply logical, critical, and creative thinking to effectively solve Computing and IT-related problems
- Synthesize solutions to novel problems using various approaches, including Artificial Intelligence (AI)
- Work productively and meet deadlines in a fast-paced, deadline-driven environment
- Independently learn and adopt new tools, current technologies and methods to stay industry-ready.
- Engage with a well-established alumni community of CST Grads in industry

And you also have the option to continue your education with various <u>bachelor's degree programs [5]</u>, similar to what grad <u>Filip Gutica [6]</u> did.

Learn more about the opportunities awaiting you on the <u>Graduating and Jobs page [7]</u>.

Entrance Requirements

The Computer Systems Technology program is offered at both the Burnaby and Downtown campuses. Accepted applicants will be assigned to either the Burnaby or Downtown Campus as part of their admission offer.

Application processing

This program is open to applications:

Start date	Applications open	Deadline
September	October 1*	March 6*
January	March 15*	August 28*
		October 18* (extended**)

^{*}or next business day

We recommend that you apply <u>early [8]</u>. All supporting documents must be submitted by the application deadline.

Indigenous applicants: Read about <u>Indigenous student support [9]</u> available for the Computer Systems Technology program.

Entrance requirements

^{**}International applicants who wish to apply by the extended application deadline must ensure that they are present in Canada with a valid study permit, as the process of obtaining a study permit may take longer for applicants located outside Canada.

Admission to this program is highly competitive. In 2022, BCIT admitted 1 in 4 applicants. Successful applicants substantially exceeded the entrance requirements in both English and math.

Competitive Entry: Two-step process

Preference will be given to applicants with:

- Academic grades above the minimum (secondary or post-secondary)
- Computer Programming 11 or 12
- Computer Science 11 or 12

Applicants with preferred entrance requirements are to submit transcripts and supporting documentation with their online application.

Step 1: Meet the following entrance requirements

- English language proficiency: Category 2 [10] English Studies 12 (67%) or equivalent
- Math: one of the following:
 - Pre-Calculus 12 (67%) or
 - Other acceptable BC and Yukon courses [11]

Read more about how to meet BCIT's entrance requirements [12]

Step 2: Department assessment

Admission is competitive and will be offered to the most qualified applicants. The competitive calculation formula takes the average of the applicant's secondary or post-secondary English and math scores.

If submitting updated grades after applying, inform Admissions and advise them of your highest grades.

A waitlist of eligible applicants, ranked in competitive order, will be kept in the event that a seat becomes available prior to the end of the first week of term. The waitlist is cleared once the program intake is full and closed; unsuccessful applicants must re-apply to be considered for the next intake. Unsuccessful students may wish to upgrade their math and English before re-applying.

International applicants

This program is available to international applicants. A valid study permit [13] is required prior to starting the program.

Students enrolled in this program must complete the mandatory work component to qualify for graduation. A co-op work permit is required prior to starting the work component.

Transfer credit

Equivalent courses from BCIT and other institutions may be transferable to the Computer Systems Technology program based on the recommendations of the instructor and the program head.

To be considered for course credit, students must:

- Be accepted into the diploma program.
- Have earned a minimum of 60% final grade in the equivalent course or courses.
- Have completed the courses within an acceptable recency of five years.
- Be able to demonstrate coverage of course learning outcomes in the equivalent course or courses.

BCIT policy allows only a maximum of 50 percent of a credential's credits to be awarded through previously earned credits. If you have taken an equivalent course and meet the above requirements, apply for transfer credit by submitting a <u>Course Credit Exemption form [PDF] [14]</u>.

Learn more about transfer credit at BCIT [15]

Apply to program

Apply directly to the Computer Systems Technology Diploma program. This program shares a common first year of core subjects. In the second year, students choose a specialization.

To submit your application:

- Include proof of meeting all entrance requirements.
- Convert all transcripts and supporting documents to <u>PDF files [16]</u>.
- Have a credit card ready to pay the application fee.

Learn more about how to apply [18]

Scheduled Intakes

September and January each year.

Technology entry

The <u>Technology Entry (TE) [19]</u> program is a full-time, day school program which provides academic upgrading to students wishing to enroll in Computing, Engineering, Electronic, and Health Sciences programs at BCIT.

The TE program provides courses in chemistry, communication, mathematics, and physics that meet program prerequisites for selected programs at BCIT. The TE program also includes an introductory course in computer applications and a learning skills course. The program is supportive to those who require English-language training.

myCommunication

Within two business days of submitting your completed application, BCIT will send a message to your personal and myBCIT email addresses. All correspondence regarding your application will be posted to your online myCommunication [20] account at my.bcit.ca [21]. We will send you an email when a new message is posted. It is important to watch for these emails or regularly check your account online.

You can expect to receive communication concerning the status of your application within four weeks.

Advanced Placement

Conditions

The Computer Systems Technology program is offered at both the Burnaby and Downtown campuses. Accepted applicants will be assigned to either the Burnaby or Downtown Campus as part of their admission offer.

You may be eligible to apply to an advanced level of the program through either <u>re-admission</u> or <u>direct entry</u>. Please note that applications are considered based on:

- **Complete applications**: you must show proof that you have completed (or are registered in) all requirements to be considered.
- **Competitive entry**: if the number of applicants exceeds available seats, BCIT will accept those deemed to have the best opportunity for success.
- Seat availability: confirmation may not be available until approximately one week before the term begins.

Note: The Registrar's Office is the official authority on admission and entrance requirements and has the final say on whether or not you meet all entrance requirements for this program. You are responsible for submitting sufficient documentation to BCIT Admissions to be assessed.

Re-admission

You can apply for re-admission if you:

- were previously admitted to this program and completed part of it at BCIT and
- want to re-enter the program at an advanced level.

To apply:

- 1. Email cstdiploma@bcit.ca for a re-admission information kit
- 2. Submit your completed re-admission form (approved by program area) with your online application

Applications are accepted throughout the year.

Ready to submit your application? Apply now. [22]

Direct entry

If you are new to the program but have completed an equivalent part of it at BCIT or elsewhere and want to apply to an advanced level, you can apply for direct entry to level 2 or 3. Note that if you enter the program via direct entry, you are not eligible to apply for the Co-op program.

To apply:

- 1. Email cstdiploma@bcit.ca for a pre-assessment information kit
- 2. Submit the following with your online application:
 - Completed pre-entry assessment (approved by program area)
 - Proof of meeting all entrance requirements [23]

Complete applications must be submitted by:

- July 15th* for the Fall (September) intake
- November 30th* for the Winter (January) intake

*or next business day

Note: If you are submitting overseas documents, please apply early. The assessment may take up to four months.

Ready to submit your application? Apply now. [24]

Questions? Review the Admissions FAQ [25] or contact Program Advising [26].

Costs & Supplies

Learn about entrance awards [27], including awards for women and Indigenous students [28] entering computing.

Tuition fees

Use our <u>tuition estimator [29]</u> to find tuition and fees for this program.

For more information on full-time tuition and fees, visit:

- Full-Time Studies Tuition & Fees [30]
- International Tuition & Fees [31]

Books & supplies

Books are expected to cost \$500 to \$800 per term. (General estimated cost, subject to change).

Although a substantial amount of teaching and instruction occurs in labs using BCIT computers, students in CST must also **have their own Windows-compatible laptop** for use in the program. Information on the required specifications will be provided to accepted applicants. Costs for such a computer will vary depending on configuration chosen, but will likely range from approximately \$1000 to \$2000.

Financial assistance

Financial assistance may be available for this program. For more information, please contact <u>Student Financial Aid and Awards [32]</u>.

Courses

Note: The CST program curriculum has been revised effective for the Sept 2022 intake.

Students that began the program prior to Sept 2022, refer to this Program Matrix [PDF] [33]

Program matrix

First Year - Level 1		Credits
COMM 1116	Business Communications 1	4.0
COMP 1100	CST Program Fundamentals	1.0
COMP 1113	Applied Mathematics	4.0
COMP 1510	Programming Methods	7.0
COMP 1537	Web Development 1	4.0
COMP 1712	Business Analysis and System Design	4.0
COMP 1800	Projects 1	4.0
and		
-	term (5 weeks, April - May) Level 1 in January will complete these courses following Level 1.	
COMP 2537	Web Development 2*	1.5

COMP 2800	Projects 2*	4.5
*Optional for stude	nts who complete one term of co-op.	
First Year - Level 2		Credits
COMM 2216	Business Communications 2	4.0
COMP 2121	Discrete Mathematics	4.0
COMP 2510	Procedural Programming	5.0
COMP 2522	Object Oriented Programming 1	5.0
COMP 2714	Relational Database Systems	5.0
COMP 2721	Computer Organization/Architecture	4.0
and		
	term (5 weeks, April - May) Level 2 in January will complete these courses following Level 2.	
COMP 2537	Web Development 2*	1.5
	•	
	Projects 2* nts who complete one term of co-op. the first year, students apply to a specialty option.	4.5
Optional for stude	Projects 2 nts who complete one term of co-op. the first year, students apply to a specialty option.	4.5 Credits
Optional for stude Note: At the end of	Projects 2 nts who complete one term of co-op. the first year, students apply to a specialty option.	
Optional for stude Note: At the end of Second Year - Leve	Projects 2 Ints who complete one term of co-op. The first year, students apply to a specialty option. BL 3	Credits
Optional for stude Note: At the end of Second Year - Leve COMP 3522	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Set 3 Object Oriented Programming 2	Credits 6.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Let 3 Object Oriented Programming 2 Mobile Development with Android Technologies	Credits 6.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721	Projects 2 Ints who complete one term of co-op. the first year, students apply to a specialty option. By 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications	Credits 6.0 4.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Set 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design	Credits 6.0 4.0 4.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Set 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design	Credits 6.0 4.0 4.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January	Projects 2 Ints who complete one term of co-op. The first year, students apply to a specialty option. Set 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design Applied Probability and Statistics term (5 weeks, April - May)	Credits 6.0 4.0 4.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January Students that begin	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Pol 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design Applied Probability and Statistics Iterm (5 weeks, April - May) Level 3 in January will complete COMP 3800 following Level 3.	Credits 6.0 4.0 4.0 4.0 4.0
Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January Students that begin	Projects 2 Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Set 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design Applied Probability and Statistics Iterm (5 weeks, April - May) In Level 3 in January will complete COMP 3800 following Level 3. Projects Practicum 1*	Credits 6.0 4.0 4.0 4.0 4.0
*Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January Students that begin COMP 3800 *Not required for the	Projects 2* Ints who complete one term of co-op. Ithe first year, students apply to a specialty option. Set 3 Object Oriented Programming 2 Mobile Development with Android Technologies Introduction to Data Communications Algorithm Analysis and Design Applied Probability and Statistics Iterm (5 weeks, April - May) In Level 3 in January will complete COMP 3800 following Level 3. Projects Practicum 1*	Credits 6.0 4.0 4.0 4.0 4.0
*Optional for stude Note: At the end of Second Year - Leve COMP 3522 COMP 3717 COMP 3721 COMP 3760 MATH 3042 and Level 3B - January Students that begin COMP 3800 *Not required for the	Projects 2* Ints who complete one term of co-op. the first year, students apply to a specialty option. In a State of Company of Co	Credits 6.0 4.0 4.0 4.0 4.0

Client/Server Opti	on:	
COMP 3940	Client/Server Systems Development Fundamentals	5.0
or		
Cloud Computing (Option:	
COMP 3962	Cloud Computing Platforms	5.0
or		
Combined (Web ar	nd Mobile) Option:	
COMP 3975	Server-Side Web Scripting	5.0
or		
Database Option:		
COMP 3920	Database Systems 1	5.0
or		
Data Communicati	ons and Internetworking Option:	_
COMP 3980	Network Protocol Design and Implementation	5.0
or		
Digital Processing	Option:	
COMP 3931	Digital Image, Video and Audio Fundamentals	5.0
or		
Information Syster	ns Option:	
COMP 3910	Full-Stack Development for Enterprise Systems	5.0
or		
Predictive Analytic	s Option	
COMP 3948	Predictive Modelling	5.0
or		
Programming Para	digms Option	
COMP 3958	Functional Programming	5.0
or		
Tech Entrepreneur	Option	······
COMP 3942	Ideation	5.0
or		······
Technical Program	ming Option:	<u>-</u>
COMP 3951	Selected Topics in Application Development	5.0

Second Year - Leve	l 4	Credits
Common courses:		
COMP 4537	Internet Software Architecture*	4.0
COMP 4736	Introduction to Operating Systems	4.0
LIBS 7102	Ethics for Computing Professionals*	4.0
and		
January term: Students completin April - May).	g Level 4 in January take COMP 3800 in Level 4 (15 weeks) and COMP 4800 in	n Level 4B (5 week
COMP 3800	Projects Practicum 1**	5.0
COMP 4800	Projects Practicum 2**	5.0
or		
September term: Students completin	g Level 4 in September take COMP 4800 in Level 4 (15 weeks).	
COMP 4800	Projects Practicum 2**	5.0
	e Information Systems Option. ne Tech Entrepreneur Option.	
and		
Artificial Intelligen	ce and Machine Learning Option:	
COMP 4983	Machine Learning	5.0
COMP 4989	Selected Topics in Artificial Intelligence and Machine Learning	5.0
or		
Client/Server Option	on:	
COMP 4941	Client/Server Systems Quality Control	5.0
COMP 4945	Distributed Software Architectures	5.0
or		
Cloud Computing (Option:	
COMP 4964	DevOps Engineering	5.0
COMP 4968	Serverless Computing and Microservices	5.0
or		·····
	d Mobile) Option:	
or Combined (Web an COMP 4976	d Mobile) Option: Web Application Development with Microsoft Technologies	5.0

Database Option:		
COMP 4921	Database Systems 2	5.0
COMP 4925	Selected Topics in Database Systems	5.0
or		
Data Communicati	ons and Internetworking Option:	
COMP 4981	Advanced Network Applications Development	5.0
COMP 4985	Selected Topics in Data Communications/Internetworking	5.0
or		
Digital Processing	Option:	
COMP 4932	Selected Topics in Digital Processing	5.0
COMP 4995	Gaming Systems	5.0
or		
nformation Syster	ns Option:	
COMP 4870	Intranet Planning and Development	7.0
COMP 4911	Developing Enterprise Service	5.0
COMP 4915	System Administration	5.0
or		
Predictive Analytic	s Option	
COMP 4948	Predictive Machine Learning	5.0
COMP 4949	Big Data Analytics Methods	5.0
or		
Programming Para	digms Option	
COMP 4958	Concurrent Programming	5.0
COMP 4959	Selected Application of Programming Paradigms	5.0
or		
ech Entrepreneur	Option:	
COMP 4943	UX/UI Design and Prototyping	5.0
COMP 4944	Minimal Viable Product (MVP)	5.0
COMP 4946	Business Plan	6.0

Technical Program	ming Option:	
COMP 4952	HCI for Application Development	5.0
COMP 4957	Introduction to Software Engineering	5.0
 Co-op work term c	ourses (competitive entry)	Credits
To be completed af	ter Level 2 and prior to Level 3, commencing in January or May.	
COMP 2990	Cooperative Education Workterm 1	16.0
COMP 3990	Cooperative Education Workterm 2	16.0
Total Credits:		120.0

Transfer credit

Do you have credits from another BC/Yukon post-secondary school? Do you want to know if they transfer to courses here at BCIT? Check out BCIT's <u>Transfer Equivalency Database [104]</u> to find out.

Program Details

Common first year

First-year CST introduces the core skills and theory used in all areas of software development. Web development, programming, scripting, and computer architecture are all introduced. First year culminates in students working as part of a team to <u>build an application of their own design [105]</u>.

Second year (with specialization options)

The second year is comprised of:

- common courses which develop and enhance fundamental software development skills (about 60%)
- option courses to learn advanced techniques in specific computing areas (25%)
- real-world industry projects [106] (15%)

Students have a choice of option courses. However, some options are not offered every term, and there is limited space in each option. Your first-year grades are considered for option approval.

Specialization options

Artificial Intelligence and Machine Learning

The Artificial Intelligence and Machine Learning option focuses on the design and development of software to process, visualize, analyze and model data sets for the purposes of decision-making and prediction. Students develop an understanding of the fundamentals underpinning artificial intelligence (AI) and machine learning (ML) applications. Topics include search, games, constraint satisfaction problems, knowledge and reasoning, regression, classification, clustering, dimensionality reduction and kernel methods. Practical work [107] focuses on analyzing real-world data sets, developing AIML systems, as well as evaluating the performance of systems for various domains.

Client Server

The Client/Server option offers specialized courses covering the subject areas of client/server computing, distributed computing, and mobile computing. Topics include architecture, modelling and structural issues, inter-process communications, and strategies to ensure performance, reliability, scalability, availability, interoperability, and security in such systems. Using the latest software development environments and engineering tools, students develop systems and services involving network programming, database programming, web development and operating systems.

Cloud Computing

Cloud Computing option students obtain hands-on experience using a wide variety of resources and services available on the world's leading cloud computing platforms. Students create and maintain complex virtual computing environments. Students use automated software deployment, continuous integration, continuous delivery and continuous monitoring tools in cloud computing environments according to DevOps (development and operations) practices. The option culminates in students designing and developing software natively [108] for cloud computing platforms. This type of development involves creating microservices and containers designed for serverless architectures. Please note: students in this option will be posting their work on servers outside of Canada, and thus will be required to sign a Student Consent Statement.

Data Communications and Internetworking

The Data Communications and Internetworking option specializes in network architecture design, software development, and network security skills. Courses emphasize practical skills such as design, coding, debugging, and testing. Topics covered include protocol design and implementation; low-level systems programming on the Linux, Android, and Windows platforms; network application development using the TCP/IP protocol suite; wireless protocol design; and the design and implementation of device-level communications applications. Devices used include Embedded Linux boards, Android devices, Radio Frequency Identification Devices (RFID), Wireless modems, and GPS devices. Practical work is focused on the analysis, application design, and implementation of the TCP/IP protocol suite.

Database

The Database option focuses on the design and development of database-driven transaction processing and business intelligence applications, covering both database concepts and practical implementation. Included are topics on advanced queries, logical and physical database design, access methods and query optimization, transaction and concurrency control, database administration, triggers, function and stored procedure programming, dimensional modelling and analytical processing, and web-based application development with Node.js and desktop applications with C# and/or Java. Practical platforms include database systems, tools, and technologies from MySQL and Microsoft SQL Server.

Digital Processing

The Digital Processing option focuses on the development of digital image, video, and audio systems, especially as related to gaming. Emphasis is placed on development of tools for new media applications. Topics include image processing, fundamentals of AV streams, 3D gaming environments using DirectX, and performance improvement with

concurrent programming and MMX/SSE. Various techniques are studied for making filters, morphing and warping techniques, compression, mirrors, and picking in 3D worlds. Advanced projects are usually drawn from IEEE papers such as template matching, face recognition, image stitching, and others. Team projects in game development on phones/tablets and the PC are encouraged.

Information Systems

The Information Systems option specializes in developing web-based and mobile applications required by medium and large businesses. Students develop large applications with state-of-the-art tools and application servers, and learn to administer Linux and Windows Servers. Topics include system architecture, performance, scalability, and security in distributed systems. Technologies covered include both Enterprise Java (including Java Server Faces, Java Persistence Architecture, Enterprise Java Beans) and Microsoft's .NET (including ASP.NET, C#, Web services).

Predictive Analytics

The Predictive Analytics option focuses on software development in data analysis for enabling organizational insight. Students will apply problem-solving towards data preparation, data modeling, validation, assessment of methods and reporting. Topics include exploratory data analysis, regression, time series studies, dimension reduction, clustering and classification, machine learning, and reporting. Practical work involves development with data sets from a wide range of sectors to reinforce effectiveness of methods within the data analytics development life cycle.

Programming Paradigms

The Programming Paradigms option focuses on developing software using multiple languages and paradigms. Student will acquire the techniques of several programming paradigms, and learn to choose an optimal paradigm for a particular problem. Topics include functional programming and concurrent programming using the actor model and using communication channels. Practical work will focus on the application of different paradigms to software development, such as web development, the design and implementation of domain-specific languages (DSLs), and the implementation of highly-concurrent and fault-tolerant software.

Technical Programming

The Technical Programming option covers advanced techniques in design and software development. Topics include code techniques used for desktop, web and distributed applications (client-server and three-tier architectures), concurrent programming (multi-threading, synchronization and interprocess communication), design principles of human-computer interaction, and project management. They analyze user needs and design and construct efficient applications with an emphasis on proper design, robust code, documentation, optimization and testing. Students acquire valuable real-world experience through a <u>large-group software development project [109]</u> in term four. The all-class project gives students the opportunity to experience the challenges and responsibilities of a real-life project.

Web and Mobile

The Web and Mobile option is aimed at students who want to specialize in developing software applications for Apple iOS devices, as well as websites. Students develop hands-on skills in JavaScript, jQuery, PHP and Laravel, ASP.NET, Java, C# and Objective-C. Working in teams, they apply industry standards, design patterns, and use Agile development with Scrum. Graduates are able to develop and use client-side and server-side code with multiple programming languages to create mobile/responsive websites, plus web and mobile applications for the iPhone.

Industry Sponsored Student Projects (ISSP) [110]

In second year, students work directly with external industry sponsors on projects via the Industry Sponsored Student Project (ISSP), applying their newly-learned skills, and acquiring real-world experience. Students work in teams with an industry sponsor, proceeding through the development life-cycle to develop an IT or software solution. All students participate in two projects.

Read more about how students, for example, contributed to <u>educational entertainment company airG [111]</u>, applied their skills to help <u>legal software leader Clio [112]</u>, and used AI to tackle <u>COVID-19 challenges [113]</u>.

Student Support

BCIT is committed to providing assistance to all its full- and part-time students with permanent or temporary, visible or non-visible disabilities. Current and future students who may need support to overcome the limits and barriers encountered during their studies are encouraged to contact BCIT's <u>Accessibility Services [114]</u> to attend an information session or to arrange an interview with one of the institute's Vocational Rehabilitation Specialists.

<u>Students and industry connect in BCIT Tech Collider</u> [115]

Program length

This is a full-time, two-year diploma program.

Students who need extra time, or who participate in co-op, typically complete the program within three years.

Program delivery

In person: This program is delivered on campus.

Program location

The Computer Systems Technology program is offered at both the Burnaby and Downtown campuses. Accepted applicants will be assigned to either the Burnaby or Downtown Campus as part of their admission offer.

Burnaby Campus [116] 3700 Willingdon Avenue Burnaby, BC

Downtown Campus [117] 555 Seymour Street Vancouver, BC

Continue your education

Degree Completion

Graduates of the Computer Systems Technology Diploma program may pursue a BCIT <u>Bachelor of Science in Applied Computer Science [118]</u> degree. The degree program is an extension of the diploma program, covering advanced technological and management skills, which can help position graduates for further progression in the IT workplace.

Co-operative education

The <u>co-op</u> education component [119] of the CST program provides students with substantial benefits in their IT career preparation, given that employers are more eager to hire graduates who have had some co-op experience. Students who apply to complete the co-op terms are required to meet year one performance qualification criteria. Students will require a minimum of two four-month co-op terms to graduate with a co-op designation on their CST diploma. These two co-op terms are back-to-back, and are completed between Levels 2 and 3

Graduating & Jobs

Sector snapshot

Job opportunities

Computer Systems Technology Diploma graduates have a wide variety of career options in the IT industry. Many start their careers as an entry-level software developer, application programmer, software tester, or network or database administrator. Later they can progress to positions such as systems analyst, IT project managers, team leads, software architects, information security analyst, and senior consultant.

Some students take the IT entrepreneurial path by starting their own business. Companies founded by our grads include <u>Burton Software/Icicle Technologies [120]</u>, <u>CAMS Software/Prospero [121]</u>, <u>Skybox Labs [122]</u> and <u>PlentyofFish [123]</u>. Read more about this alumnus who is <u>creating opportunities for others [124]</u>.

Our graduates work in companies of all types and sizes, including:

- AirG
- Clio
- Electronic Arts
- Fortinet
- Global Relay
- Habañero
- Hootsuite
- IBM
- ICBC
- IUGO Mobile
- Lululemon
- MDA
- Microsoft
- Mobify
- SAP
- Sophos
- Telus
- Vision Critical

<u>HyperTalent – Careers in Tech</u> [125]

Furthering your education

Graduates of the Computer Systems Technology program can also pursue a <u>Bachelor of Science in Applied Computer Science [126]</u> at BCIT.

Graduate employment outcomes

The BCIT student outcomes report presents summary findings from the annual survey of former students administered by BC Stats one to two years after graduation. These reports combine the last three years of available results for the 2021-2023 BCIT Outcomes Surveys of 2020-2022 graduates and for Degree 2019-2021 graduates. The reports are organized into three-page summaries containing information on graduates' labour market experiences and opinions regarding their education. More detailed information can be accessed at the <u>BC Student Outcomes [127]</u> website.

To view these results, you may need to have the <u>Adobe Acrobat Reader [128] installed in your Web browser.</u>

• Computer Systems Technology [129]

Faculty, Advisors & Staff

Prospective Student Inquiries

Email: program_advising@bcit.ca

Current Student Inquiries

Email: cstdiploma@bcit.ca

Full-time faculty

Thomas Magliery

Program Head – Student Success, CST Diploma

Chi En Huang

Program Head - Curriculum Leadership, CST Diploma

Option Head – Artificial Intelligence and Machine Learning, CST Diploma

Aaron Hunter, Instructor

Albert Wei, Option Head – Programming Paradigms

Amir Amintabar, Instructor

Arron Ferguson, Instructor

Borna Noureddin, Instructor

Bruce Link, Option Head - Information Systems

Carly Wong-Orr, Instructor

Christopher Thompson, Instructor

D'Arcy Smith, Option Head – Data Communications & Network Security

Farnaz Dargahi, Instructor (On leave)

Frederic Guo, Option Head – Cloud Computing

Hoda Rashedi, Instructor (On leave)

Jason Wilder, Instructor

Jeeho Ryoo, Instructor (On leave)

Jeff Yim, Instructor

Marco Ho, Option Head - Digital Processing

Maryam Khezrzadeh, Instructor

Maryam Tanha, Instructor

Medhat Elmasry

Option Head - Web & Mobile (.NET), CST Diploma

Overview: Instructor, independent IT contractor, and founder of the .NET BC user group in Vancouver. Regular speaker at user group meetings and technology conferences.

Michal Aibin, Instructor

Mirela Gutica, Option Head – Technical Programming

Pat McGee

Option Head – Predictive Analytics Option

Overview: Before joining BCIT full-time, Pat served as a Technical Engineer with Business Intelligence technologies at SAP. He holds a Master's Degree in Data Science and has written multiple books on software development for McGraw-Hill.

Rahul Kukreja, Instructor (On leave)

Tejinder Randhawa, Option Head – Client/Server

Advisory committee

BCIT is well-respected by employers for its ties to industry. In Computing, this connection is formalized through a <u>Program Advisory Committee (PAC) [130]</u> comprised of experts in a range of roles from a cross-section of companies. The department consults regularly to ensure program currency and relevance.

Contact Us

Programs and courses are subject to change without notice.

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