PROGRAM OUTLINE

Program Title:	Computer Systems Technician
Program Code:	CST
Level:	
Delivery:	3 Semesters
Credential:	Certificate
Eligible for RPL:	
Location:	Iqaluit
Division:	Business and Leadership
Prepared By:	_____
Date:	_____
Previous Outline Dated:	_____
Reviewed/Revised By:	_____
	_____
Approval Date:	_____
And BOG Motion #	

Program Description:

The one-year (3 semester), Computer Systems Technician program is designed to prepare graduates for an entry-level career in IT. Graduates can work individually or as part of a team to implement and maintain information technology solutions that correspond to the day-to-day requirements of individuals and organizations. From repairing desktop computers to monitoring network operations and beyond, graduates are prepared to work in a broad range of employment setting in a variety of sectors in both large and small organizations. The program focuses on technical aspects of commonly used components and troubleshooting techniques for computer hardware, operating systems, networking technologies, system administration, and a suite of related support and application software packages. It also supports students in developing their communication and administration skills, including the ability to work in teams and utilize project management and customer service techniques. Requirements and subject matter found in certifications such as Comp TIA's (Computer Technology Industry Association) A+ will be covered. At the end of this program, students will be prepared to write related certification exams. Students will also complete a six-week field placement course allowing them to feel fully prepared to enter the workforce upon graduation.

Inuit Qaujimajatuqangit:

The Computer Systems Technician Program integrates the Guiding Principles of Inuit Qaujimajuqtuqangit and recognizes the value of collaborative learning environments unique to Nunavut. Presentation of program content will draw heavily on the Inuit concept of Inuuqatigiitsiarniq: Respecting others' work and developing healthy work relationships that respect fellow workers. This instructional strategy will help to prepare the students to work collaboratively with other professionals toward a common result. The program will also integrate Pilimmaksarniq: development of skills through practice, effort, action, and patience. Instructors will seek to balance instructional methods using learning labs and project–based learning assignments, in addition to conventional lectures. Instructors will also promote an environment of inclusive participation through open dialogue and continuous feedback throughout the program drawing on the Inuit concept of Tunnganarniq. This instructional strategy draws upon a collaborative approach among students by forming working relationships with each other to collectively solve problems as they strive toward a common goal.

Career Opportunities

Graduates may find employment as technical support specialist for computers, mobile devices, and networks in a wide variety of corporate environments in the industrial, governmental, and service sectors. Positions may also include: system administration; network administration and maintenance for LAN/WAN (Local Area Networks/Wide Area Network), and Internet/Intranet; hardware/software sales representatives; customer service support representatives; technical support specialist; computer repair.

Program Learning Outcomes:

Upon successful completion of the Computer Systems Technician Program, the student will be able to:

1. Identify, analyze, develop, implement, verify, and document the requirements for a computing environment.
2. Contribute to the diagnostics, troubleshooting, documenting, and monitoring of technical problems using appropriate methodologies and tools.
3. Implement and maintain secure computing environments.
4. Communicate and collaborate with team members and stakeholders to ensure effective working relationships.
5. Select and apply strategies for personal and professional development to enhance work performance.
6. Apply project management principles and tools when working on projects when working on projects within a computing environment.
7. Adhere to ethical, legal, and regulatory requirements and/or principles in the development and management of computing solutions and systems.
8. Provide end-to-end customer support, ranging from identifying problems to troubleshooting and debugging.
9. Design, Install, configure, maintain, upgrade, and decommission computing system infrastructures.
10. Perform day-to-day IT support tasks including computer assembly, wireless networking, installing programs, mobile device troubleshooting and providing customer support
11. Provide technical support for computing system infrastructures that aligns with industry best practice.
12. Identify different solutions for cloud computing services; software as a service (SAAS), platform as a service (PAAS) and infrastructure as a service (IAAS).

Program Delivery Model: Blended

Applied learning, laboratory work, practicums, classroom, seminars/workshops, guest speakers/Elders, and opportunities to connect with the community through field trips and project work. Some elements of digital learning are incorporated in courses throughout the program.

Admission Requirements

Applicants must:

- Have a Nunavut High School diploma (general or advanced), ABE Math 140 and ABE English 140, or equivalent. Assessments for both Math and English may be required.
- Be 17 years of age or older.
- Must submit a letter detailing their interest in the program and reasons for applying.
- If applying under NAC's Prior Learning Assessment Policy, must submit a recent resume detailing work history supported by a letter of reference from an employer or community organization. Eligibility will be determined by academic achievement testing for English and Math.

All applicants must provide:

- 2 references (non-family)

Applicants may be contracted for an interview either in person or by telephone.

Selection Process:

- Review application documents
- Review results of assessments for Math and English

Applicants will be admitted to the program based on space availability and their ability to meet the entrance requirements. The program admissions committee may conduct interviews with students to assess qualifications. In some cases, students may be required to meet special conditions before entry. Preference will be given to Nunavut Inuit.

Graduation Eligibility:

To graduate from this program, students must successfully complete all courses in the program by obtaining a mark of 50% or higher in each course, except for the Field Placement, which requires a pass or fail grade. The passing weighted average for promotion through each semester and to graduate is 60%.

Practicum Information

The work-integrated Field Placement course is an integral part of the Computer Systems Technician program. This applied learning placement provides students with an opportunity to observe and acquire the practical work and professional competencies necessary for a successful career as an IT professional.

The field experience allows students to integrate and apply learning from the classroom to various IT work settings. The field placement requirement in the CST program requires students to translate theory to practice, complete detailed learning contracts, attain an acceptable overall placement evaluation and complete a reflective self-evaluation.

The placement opportunity will build on the theory component of the program and allow enhanced development of skills, knowledge, and the integration of learning throughout. The field placement course is demanding and therefore should be acknowledged in this capacity by providing credit to the course.

Students will participate in preparing for the placement by attending a seminar prior to starting their placement and meet with industry representatives in the IT field. Students must also prepare a presentation to be delivered at the end of the work placement.

1 credit hour will be assigned per 30 hours of completed field time. Total credits for the 6-week Field Placement block will be 6 credits.

Note: Students must complete all courses in the preceding semesters to qualify for their field placement.

PROGRAM STRUCTURE

1 year – Three semesters, including 1 Field Placement (work experience) of 6 weeks.

No electives.

Course Descriptions

Year 1- Semester 1 (September – December)

CST 101 - Technical Communications – 45 hours – 3 credits

Clear, concise, and detailed communication is essential for technical workplaces. Learner's will plan and execute a variety of formal and informal visual, oral and written communication tasks. Exercises and activities are designed to foster confidence and competence in workplace communication.

CST 102 – Math for IT: Numeracy and Logic – 45 hours – 3 credits

Math for Information Technology covers the following: general review of mathematical fundamentals, percentages and markups, cash flow calculations, one-time and recurring costs and benefits, present value of cash flows, ROI (Return On Investment) calculations, as well as NPV (Net Present Value) calculations.

CST 103 – Computer Fundamentals – 60 hours – 4 credits

This course is the first of a series that aims to prepare learners for a role as an entry-level IT Support Specialist and will introduce the world of Information Technology, or IT. Topics include the different facets of Information Technology - computer hardware, the Internet, computer software, troubleshooting, and customer service. This course covers a wide variety of topics in IT that are designed to give leaners an overview of what's to come in the CST program.

CST 104 – Introduction to Networking – 60 hours – 4 credits

Computer networking refers to interconnected computing devices that can exchange data and share resources with each other. This course is designed to provide a full overview of computer networking. Topics over everything from the fundamentals of modern networking technologies and protocols to an overview of the cloud to practical applications and network troubleshooting.

CST 105 – Operating Systems – 60 hours – 4 credits

In this course, through a combination of video lectures, demonstrations, and hands-on practice, learners will develop skills in understanding the main components of an operating system and how to perform critical tasks like managing software and users and configuring hardware.

Year 1 - Semester 2 (January – April)

CST 106 – System Administration and IT infrastructure Services – 60 hours – 4credits

This course will transition learners from working on a single computer to an entire fleet. Systems administration is the field of IT that's responsible for maintaining reliable computers systems in a multi-user environment. This course will cover the infrastructure services that keep all organizations, big and small, up and running. A deep dive on cloud computing will include everything from typical cloud infrastructure setups to how to manage cloud resources. The course will also cover how to manage and configure servers and how to use industry tools to manage computers, user information, and user productivity.

CST 107 – IT Security Fundamentals – 60 hours – 4 credits

This course covers a wide variety of IT security concepts, tools, and best practices. It introduces threats and attacks and the many ways they can show up. The course will give learners some background of encryption algorithms and how they're used to safeguard data. The three As of information security: authentication, authorization, and accounting will be discussed. Additional topics include network security solutions, ranging from firewalls to Wifi encryption options. The course is rounded out by putting all these elements together into a multi-layered, in-depth security architecture, followed by recommendations on how to integrate a culture of security into an organization or team.

CST 108 - Foundations of IT Service Management – 45 hours – 3 credits

Technical customer support is an essential business service, and knowledge of IT Service Management, as described in the IT Infrastructure Library (ITIL), is required to work in an ITIL compliant organization as part of a service team. Students explain common structures and explore best practices of service management with a focus on ITIL. In addition, students practice soft skills, such as effective listening and communication to establish professional relationships with customers that have IT related issues and requests.

CST 109 – PC Troubleshooting – 60 hours – 4 credits

Protecting the integrity of data is crucial. This course will cover topics such as safe practices on the internet, understanding malicious threats and attacks such as phishing and hacking, managing patches and updates for software and hardware, and the importance of firewall and anti-malware software. Learners will be able to protect both personal and corporate data, prevent and block unauthorized users, hackers, intruders and other malicious attacks.

CST 110 – A+ Certification Preparation – 60 hours – 4 credits

This course focuses on the skills required for A+ certification, the industry standard for IT professionals. At the end of this course, learners will be prepared to write the qualifying exams through the Computing Technology industry Association (CompTIA). Students will practice problem-solving skills in lab activities to develop core competencies. Topics include installing, maintaining, and troubleshooting PC and mobile device hardware, networking and connectivity and procedures for supporting a variety of operating systems.

Year 1 - Semester 3 (April to June: 6 Week Block)

CST 111 – Field Placement – 195 hours – 6 credits (To be achieved over a 6-week block)

This applied learning course will provide opportunity for students to become directly involved in the full range of tasks related to the work of an IT Support position while receiving mentoring and coaching during a field placement term. This course is a culminating, performance-based assessment that requires the application of the knowledge gained during the program, allowing the integration of theory into practice.

The focus is on application of knowledge, critical thinking, problem- solving, teamwork, oral communication, and literacy. Upon completion of the practicum, students submit a written report which documents the tasks performed and reflects on the experience and skills gained related to their professional development growth plan and learning goals.