

The Focus on Information Technology (FIT) Portfolio

Introduction

For students wanting to obtain either of ICTC's national Certificates it is suggested that they maintain a "Portfolio of Examples or Artifacts" of the tasks learned as a demonstration of his/her skills. In addition the student is expected to maintain a passport of accomplishments that is detailed in a separate document.

These skills have been broken down into eleven Domains as identified in the FIT program. These examples may take the form of "Documented Verification, Real or Hard Artifacts and Electronic Examples".

Examples that are acceptable could be:

- The result of an examination from the course, which requires the development, learning or perfecting of skills as identified in the Domain areas of the Portfolio and Passport.
- A copy of a project from a course in which the student is required to demonstrate the skill. These might consist of hard copy or electronic examples such as a CD-ROM, DVD or Web Page.
- A letter or copy of an experiential learning report or journal from a Cooperative Education teacher, which indicates that the student's Personal Learning Plan or Education Plan has been accomplished with the required hours and that the intended skills have been achieved.

A student may develop his/her skills through varied pathways and courses that might not necessarily be part of an Information Technology course. For example, some of the skills may be acquired through Business, Cooperative Education, English or Mathematics.

The following Guide can be used to identify the student's skills and provide the teacher with suggestions and examples of artifacts that show that the student has accomplished the competencies outlined in the FIT program.

In general, any documentation that is signed by a teacher or workplace supervisor is acceptable for purposes of obtaining credit toward the national certificate. It must further be understood that ICTC reserves the right to challenge anything in a student's portfolio or passport at any time and to request proof that the task or skill has been obtained.

The following table outlines the domain, standard name, competencies, and sample portfolio artifacts for the FIT program. The student is expected to study it closely in order to gain an appreciation of what is required to develop his/her own portfolio.

SECTION I Common to all Concentrations

(C= Computers-Networking, S = IT Security, D= Database Systems)

DOMAIN: 1.0			
Develop and demonstrate important employment skills and attitudes (Aim #1)			
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
1.1_CSD	Function effectively as a member of a team helping to achieve group goals	-participate as a member of a team providing input and contributing to the achievement of agreed upon goals and schedules	<p>As reported by the Teacher, the student</p> <ul style="list-style-type: none"> • Has done group work as part of his/her class work (i.e. report card mark) • Has electronic samples of work done by group • Work demonstrates project management <p>Skills can be acquired through any class or course within the Secondary program that uses group work as part of the learning setting. e.g. Communications Technology, Drama, English, Business, Science, Physical Education</p>

<p>1.2_CSD</p>	<p>To practice and demonstrate the skills, attitudes, and behaviours necessary for employment, as identified by organizations such as the Conference Board of Canada and Human Resources and Skills Development Canada</p>	<p>-show interest and initiative in assigned work as demonstrated by regular attendance and being on time for workplace and classroom activities</p> <p>- use good judgement in setting and following priorities</p> <p>-demonstrate a commitment to producing quality work in the workplace and classroom</p>	<p>As reported by the Teacher, the student</p> <ul style="list-style-type: none"> • has demonstrated regular attendance with few lates • has records of volunteer work • has records of extra curricular activities • has demonstrated an above average grade in courses taken • qualifies for scholarships based on community or academic work <p>Skills can be acquired through any class or course within the Secondary program. Most specifically, Business or Cooperative Education programs which have partnered with local Business and Industry.</p>
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DOMAIN: 1.0	Develop and demonstrate important employment skills and attitudes (Aim #1)--- CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
1.3_CSD	Demonstrate critical listening skills by responding appropriately to spoken and visual presentations	<p>-demonstrate the ability to listen critically and to respond to instructions</p> <p>-read, summarize and interpret diagrams and other complex content</p> <p>-interact with people from various backgrounds and take into account their differing levels of technical and other skills in discussions</p> <p>-paraphrase or summarize technical and professional communications</p>	<p>As reported by the Teacher (report card/ letter) the student is able to:</p> <ul style="list-style-type: none"> • Understand and respond to verbal instructions • Understand and explain written material • Demonstrate through actions and/or written assignments a knowledge of cultural differences <p>As demonstrated by documentation / reference letters, student has:</p> <ul style="list-style-type: none"> • Shown confidence while speaking with people from various technical and non-technical backgrounds as in mock interviews • Demonstrated an ability to summarize spoken technical and professional communications by explaining or teaching the material to another person <p>Skills can be acquired through any class or course within the Secondary program. E.g. English, Literacy (reading, writing, presentation skills), Computer Science/Engineering, Communications Technology, Business or Cooperative Education,</p>

DOMAIN: 1.0	Develop and demonstrate important employment skills and attitudes (Aim #1)--- CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
1.4_CSD	Produce effective technical and professional writing including reports, emails, applications, memos, letters, resumes, instructions, summaries and descriptions	<p>-use good sentence structure and appropriate vocabulary in communications</p> <p>-take into account the background of the target audience when creating technical and professional written materials</p> <p>-create technical correspondence which is clear and easy to understand</p> <p>-use computer software and other technology to produce high quality written work</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Communicate using written language that is clearly understood by the reader • Use a word processor to create, edit and produce (hard copy and electronic) versions of material • Use word processor dictionary and thesaurus to create grammatically correct and audience appropriate documents <p>Skills can be acquired through courses such as Entrepreneurship, Communications Technology, Cooperative Education, English, Business</p>

DOMAIN: 1.0	Develop and demonstrate important employment skills and attitudes (Aim #1) --- CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
1.5_CSD	Develop and deliver presentations using an organized, strategic approach.	<p>-work alone or in a group to produce presentations using such software as Microsoft PowerPoint</p> <p>-create presentation content which is clear and presented in a logical order</p> <p>-use effective verbal and non-verbal presentation techniques (modulate voice for emphasis, use appropriate gestures and other body language)</p> <p>-incorporate the power of presentation software (graphics, animation, audio) and other audio-visual aids into presentations</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Communicate using written language that is clearly understood by the reader • Communicate using spoken language that is clearly understood by the listener • Using a presentations package create, edit and produce (hard copy and electronic) versions of material • Use a dictionary and thesaurus to create grammatically correct and audience appropriate documents <p>Skills can be acquired through courses such as Entrepreneurship, Communications Technology., Cooperative Education, English, Literacy (reading, writing, presentation), Business English / Communications, Drama and ESL</p>

<p>1.6_CSD</p>	<p>Employ critical thinking skills and concern for others in making decisions that are both ethical and effective.</p>	<p>-cooperate with group members in the making of decisions</p> <p>-identify the various alternative decisions and the potential consequences of each</p> <p>-logically justify a specific decision to the group or other relevant parties</p> <p>-respond to constructive criticism or unexpected outcomes to alter plans of action</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Participate in group work as part of his/her class work (i.e. report card mark) • Has electronic or hard copy samples of work done by the group <p>Skills can be acquired through any class or course within the Secondary program that uses group work as part of the learning setting. E.g. Law, International Business, World Religion, Man, Technology and Society, Communications Technology, Drama, English, Business, Science, Physical Education</p>
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DOMAIN: 1.0	Develop and demonstrate important employment skills and attitudes (Aim #1) --- CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
1.7_CSD	Participate in work experience activities (including Co-op placements) that support career, education, and personal goals as described in the Student Learning Plan	<p>-complete 200 hours of workplace experience which relates to personal career or educational goals</p> <p>-produce quality work with minimal supervision</p> <p>-follow workplace safety and other regulations</p> <p>-describe the learning experiences and skills acquired during the work experience</p> <p>-describe how the work experience (particularly the skills acquired) relates to personal educational and career goals</p>	<p>As reported by the Teacher (report card/ letter) and demonstrated by documentation / reference letters the student has:</p> <ul style="list-style-type: none"> • Completed logs and journals for experiential learning, based on the Provincial Standards for credits e.g. 110 hrs = 1 credit, 220 hrs = 2 credits <p>Skills can be acquired through student participation in Experiential Learning courses.</p>

DOMAIN: 2.0		Incorporate technology into the process of lifelong learning (Aim #2)	
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
2.1_CSD	Show importance of continued professional development (life long learning) to IT employers	<p>-define and describe continuing professional development and its importance to businesses and career advancement</p> <p>-research, using the Internet and other resources, the kind of professional development opportunities provided by various companies</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports and or essays which examine current job prospects as well as job futures both locally and globally • Present report in either electronic form or hard copy <p>Skills can be acquired through classes or courses within the Secondary program such as Law, International Business, Man/Technology and Society, Communications Technology, Business Studies or Entrepreneurship. This skill area needs to include the examination of a worker from an entry level through career growth to determine what is needed to remain competitive in the job market.</p>

<p>2.2_CSD</p>	<p>Demonstrate knowledge of IT-related college, university and other educational and training opportunities into which an ITSA graduate could progress after high school.</p>	<p>-research, using the Internet and other resources, the education and training requirements for various IT careers</p> <p>-list and categorize various IT related occupations</p> <p>-relate the level of training and education required to pursue various occupations and the high school entrance requirements for these educational and training opportunities</p> <p>-actively pursue opportunities for further education by contacting institutions which offer IT training</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports and or essays that examine IT careers and the education required to enter this occupation. • Demonstrate ability to complete mock interviews and applications for post secondary studies and courses • Present reports in either electronic form or by hard copy to illustrate understanding of requirements to enter the IT work force <p>Skills can be acquired through classes or courses within the Secondary program such as Law, International Business, Man/Technology and Society, Communications Technology, Business Studies or Entrepreneurship. This skill area needs to include the examination of a student from entering secondary school through to post secondary studies.</p>

DOMAIN: 3.0	To gain a basic knowledge of how common IT is in our world and the effect it has on our daily lives and possible careers (Aim #3)		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
3.1_CSD	Demonstrate an awareness of the need for IT skills in every sector of society	<p>-conduct research on local company's IT resources determining the level of reliance they have on IT</p> <p>-conduct research on the development of IT over the past 25 years and its impact on every day life</p> <p>-use research information to make predictions on how IT will develop in the future</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Perform internet searches that return relevant data and is able to apply search techniques such as Boolean Logic • Create essays, presentations or reports <p>As required by courses such as Business, Marketing, Entrepreneurship, Cooperative Education, Media (print / broadcast), International Business, Introduction to Business, E-Commerce, E-Business and Accounting</p>
3.2_CSD	Develop an awareness of the importance of IT to national and world economies	<p>-conduct research on the importance of IT internationally</p> <p>-conduct research on the size and relative strength of the IT industry in Canada</p> <p>-use research information to predict areas of IT which will be of importance in the future</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Perform internet searches that return relevant data and is able to apply search techniques such as Boolean Logic • Create essays, presentations or reports and growth analysis <p>As required by courses such as, Business, Marketing, Entrepreneurship, Cooperative Education, Media (print / broadcast), International Business, Introduction to Business, E-Commerce, E-Business and Accounting</p>

DOMAIN: 4.0	To understand the business life-cycle and the role of IT in supporting the changes that take place (Aim #4)		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
4.1_CSD	Describe the basic features of a business and the features that must exist in order for it to function effectively and profitably	<ul style="list-style-type: none"> -conduct research on the basic features and functions of a business -define entrepreneurship and explain its importance to businesses and careers in IT -define the relative advantages of franchising, buying an existing business or starting a new business -describe good bookkeeping practices using the terms: cash flow, balance sheet and general ledger -define the various occupational roles and responsibilities within a small business -define the role of marketing and the importance of the marketing plan -describe strategies to improve the business/customer relationship -describe the legal and ethical responsibilities of a business 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports journals, essays, presentations or reports • Perform internet searches that return relevant data and is able to apply search techniques such as Boolean Logic • Use Internet Resources to create “Case Studies” to emulate actual situations or scenarios for businesses that will address topics such as E-commerce <p>As required by courses such as Junior Achievement, Marketing, Entrepreneurship, Accounting, Bookkeeping, Law (Canadian, Labour and International), E-Commerce, Economics and Cooperative Education</p>

DOMAIN: 4.0			
To understand the business life-cycle and the role of IT in supporting the changes that take place (Aim #4) ---CONTINUED---			
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
4.2_CSD	Examine and explain the role of IT in supporting business activities both internal and external to the company	<ul style="list-style-type: none"> -define and describe the important role that IT plays in local businesses -list the various functions that IT plays in business operations (including the differences between internal and external IT systems) -describe how IT systems affect and support workflow in the workplace -describe the importance of IT systems in the day-to-day operation of businesses and discuss the potential impact of system failures -identify the role of IT in supporting various business/supplier relationships and how these technologies can be expected to change in the future 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Use Internet Resources to create “Case Studies” to emulate actual situations or scenarios for businesses that will address topics such as: <ul style="list-style-type: none"> ○ IT Conversion ○ Call Centres ○ VAR Suppliers ○ E-commerce ○ Security ○ Technology lifecycle • Create reports journals, essays, presentations or reports • Perform internet searches that return relevant data and is able to apply search techniques such as Boolean Logic <p>As required by courses such as Junior Achievement, Marketing, Entrepreneurship, Accounting, Bookkeeping, Law (Canadian, Labour and International) and Cooperative Education</p>

DOMAIN: 4.0			
To understand the business life-cycle and the role of IT in supporting the changes that take place (Aim #4) ---CONTINUED---			
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
4.3_CSD	Demonstrate knowledge of basic business activities, including how businesses change over time and how IT supports these changes	<p>-use examples from the community to show how business IT systems have changed over time and how IT supports business change and redevelopment</p> <p>-describe several current business growth strategies</p> <p>-describe recently developed business activities such as Data Mining and Customer Relationship Management and how they are supported by IT</p> <p>-describe the role of professional development and training in keeping a business's IT systems and employees up to date</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Use Internet resources to obtain relevant data to be able to create "Case Studies" to emulate actual situations or scenarios for businesses such as EDS, Microsoft, Leger & Leger, Nortel. • Compare professional training done by these companies and with contract training such as CDI College, Oracle, DeVry Institute and local Community Colleges (not to include post secondary programs, but professional training services) • Create reports journals, essays, presentations or reports • Perform internet searches to obtain relevant data and is able to apply search techniques such as Boolean Logic to research business types such as: <ul style="list-style-type: none"> ○ Call Centres ○ Telemarketing ○ E-commerce ○ Security ○ Technology and product lifecycle <p>As required by courses such as, Marketing, Entrepreneurship, Law (Canadian and International), Cooperative Education and Guidance</p>

DOMAIN: 4.0		To understand the business life-cycle and the role of IT in supporting the changes that take place (Aim #4) ---CONTINUED---	
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
4.4_CSD	Participate in the operation of a simulated business, applying professional, technical and business skills as necessary	<p>-demonstrate the ability to work independently or as a member of a group in the creation and operation of a simulated business</p> <p>-based on the business simulation, conduct a needs analysis to find a potentially successful business opportunity</p> <p>-create a business plan and marketing plan for the simulated business</p> <p>-produce marketing materials for the simulated business</p> <p>-in cooperation with the group produce an organizational structure for the simulated business</p> <p>-create a cash flow statement and balance sheet for the simulated business</p> <p>-design and implement IT systems for the simulated business</p> <p>-determine opportunities for the simulated business to grow over the course of the school year</p>	<p>As reported by the Teacher, the student</p> <ul style="list-style-type: none"> • Has done group work as part of his/her class work (i.e. report card mark) or with projects such as Junior Achievement • Participated in a Business Simulation • Has electronic samples of work done by the group • Work demonstrates project management <p>Skills can be acquired generally through a Business oriented class such as Accounting, Bookkeeping, Marketing, Entrepreneurship, Introduction to Business, Computer Engineering, CISCO, Networks + and Cooperative Education</p>

DOMAIN: 5.0		To identify and explore career opportunities within the field of IT and develop a career plan (Aim #5)	
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
5.1_CSD	Identify, assess and describe skills, interests, values and personality traits that relate career decision-making.	<ul style="list-style-type: none"> -research various educational and training paths to IT careers -based on personal interests, values and personality traits, develop a rough career plan -define how personal interests, values, and personality traits affect career decisions -identify the potential affects of future workplace experiences on career choice -set short tem and long term career goals and identify the training and education necessary to meet these goals -after having explored the various career opportunities, matched these to personal strengths and weakness and identified the educational and training requirements for each, create a personal action plan for the next several years -identify important aspects of personal values in tackling workplace stereotyping and discrimination 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports and or essays that examine how personal interests can be a factor in choosing an IT career and the education required to enter this occupation. • Create a Personal Learning Plan or Personal Education Plan that reflects his/her interests • PLP or PEP should reflect more than one career choice and should cover more than one year <p>Skills can be acquired through classes or courses within the Secondary program such as: Law (Canadian, Labour and International), International Business, Man/Technology and Society, Guidance, Cooperative Education, General Business Studies or Entrepreneurship.</p>

DOMAIN: 5.0			
To identify and explore career opportunities within the field of IT and develop a career plan (Aim #5) ---CONTINUED---			
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
5.2_CSD	Demonstrate an understanding of the idea of personal transferable skills and explain their importance in work today and how they relate to career decision-making	<p>-define "personal transferable skills"</p> <p>-provide examples of how personal transferable skills have affected your performance in past activities</p> <p>-describe how personal transferable skills can affect career choices</p> <p>-create a list of current competencies and describe how these may feed into future educational or career choices</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports, essays or presentations (hard-copy or electronic) which examine what are personal skills and how they can be transferred between school, career and personal interests • Create a Personal Learning Plan or Personal Education Plan that reflects his/her skills and addresses how this can be used to choose a future career • Use skills to perform internet searches with Boolean Logic to limit results <p>Skills can be acquired through classes or courses within the Secondary program such as: Guidance, Cooperative Education, General Business Studies or Entrepreneurship</p>

DOMAIN: 5.0	To identify and explore career opportunities within the field of IT and develop a career plan (Aim #5) ---CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
5.3_CSD	Develop career information research and decision-making skills, using a variety of sources including the Internet and interviews	-conduct research into currently available career opportunities in IT and how these opportunities are changing over time	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports, essays or presentations (hard-copy or electronic) which examine the current status of the IT Industry • Use skills to perform internet searches with Boolean Logic to limit results <p>Skills can be acquired through classes or courses within the Secondary program such as: Guidance, Cooperative Education, General Business Studies, International Business, Entrepreneurship or Marketing</p>

DOMAIN: 5.0	To identify and explore career opportunities within the field of IT and develop a career plan (Aim #5) ---CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
5.4_CSD	Research and evaluate career opportunities in the field of Information Technology	<p>-conduct research into various occupational fields in IT including job descriptions, position titles, entry requirements, duties and responsibilities</p> <p>-conduct research into potential employers of skilled IT workers</p> <p>-evaluate how the world of work in the IT field is changing and how these changes might affect career choices</p> <p>-research the current IT employment market and trends in IT graduate recruitment</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Create reports, essays or presentations (hard-copy or electronic) which examine the current status of the IT Industry • Create reports, essays or presentations (hard-copy or electronic) which examine the trends and changes in the IT Industry • Create reports, essays or presentations (hard-copy or electronic) which examine the potential employers in the IT Industry • Create reports, essays or presentations (hard-copy or electronic) which examine the education requirements expected by potential employers in the IT Industry • Use skills to perform internet searches with Boolean Logic to limit results <p>Skills can be acquired through classes or courses within the Secondary program such as Guidance, Cooperative Education, General Business Studies, International Business, Entrepreneurship or Marketing</p>

SECTION II Specific to the Computers-Networking Concentration

DOMAIN: 6.0	To apply knowledge of common desktop software application programs to resolve software related problems (Aim #CN1)		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
6.1_C	Install, configure and operate desktop productivity suite software	<ul style="list-style-type: none"> -perform research using online tools and sources -demonstrate awareness of types of application software -install commercially produced software products -apply knowledge of user and systems to produce optimum software setup and configuration -perform software troubleshooting from both a pre/post installation perspective -synthesize customer complaint description and personal observations to troubleshoot software-related problems -apply writing techniques to producing technical and end-user documentation -operate Productivity Suite Software to produce text documents, spreadsheets, presentations and databases 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> •Build a computer from parts •Load an operating system, office and production suite •Run system diagnostics •Configure local and network printer •Configure network connections (dial-up / high speed) •Participate in Technical Call Centre / Help Desk simulation •Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, General Business Studies / Applications, Data Processing, International Business, Entrepreneurship or Marketing</p>

<p>6.2_C</p>	<p>Install, configure and operate common utility software for the purpose of managing PC's and the desktop environment</p>	<ul style="list-style-type: none"> -perform research using online tools and sources -demonstrate awareness of types of utility software -install commercially produced utility software products -demonstrate understanding of software licensing and its applications/costs along with its relationship to ethics -apply utility software to effectively contribute to corporate computing goals -perform comparative analysis 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Load an operating system, office and production suite • Verify proper licensing and record license usage • Run system diagnostics • Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Install and configure desktop control such as DeepFreeze • Run diagnostic applications such as PING and TraceRoute • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, CISCO</p>
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DOMAIN: 6.0	To apply knowledge of common desktop software application programs to resolve software related problems (Aim #CN1) ---CONTINUED---		
Ref. #	Standard Name	Competencies	Sample Portfolio Artifacts
6.3_C	Install and operate diagnostic and reliability testing software	<p>-relate the role of benchmarking to computer performance assessment and diagnostic troubleshooting</p> <p>-perform fault diagnostics and troubleshooting using software as the primary tool</p> <p>-select the most appropriate diagnostic program suite through understanding its type and applicability to the situation</p> <p>-operate a wide range of benchmarking and diagnostic software</p> <p>-relate diagnostic software to its role in maintaining efficient and trouble-free computer operations</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Run system diagnostics to establish Benchmarks • Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, CISCO</p>

DOMAIN: 7.0	To provide technical support to a small company or home through maintenance, repair and configuration of PC hardware and simple network systems (Aim #CN2)		
Ref. #	Standard Name	Competencies	
7.1_C	Perform basic PC maintenance procedures	<ul style="list-style-type: none"> -relate role that regular maintenance plays in achieving reliable computer functioning -develop techniques to facilitate and maintain customer satisfaction -use basic hand tools in a safe manner for maintenance -perform maintenance procedures on computer systems and related peripherals -develop maintenance schedules and logs -comprehend technical documentation including technical specifications and procedures -demonstrate understanding of device configuration -use techniques to test, update and optimize operating system 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade • Run system diagnostics • Reference manufacturers manuals and information to improve or maintain existing systems • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Marketing, Entrepreneurship</p>

7.2_C	<p>Diagnose, identify and repair basic faults in computer hardware systems and related peripheral devices</p>	<ul style="list-style-type: none"> -manage customer expectations -demonstrate effective listening -execute logical thinking as related to troubleshooting -use technical documentation -apply computer systems and peripherals knowledge -apply computer software operation and configuration knowledge -perform fault finding -use hand tools -apply knowledge and understanding of hardware, software and firmware specifications to repair process -follow company procedures -work in an ethical manner 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade • Run system diagnostics • Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Install and configure desktop control such as DeepFreeze • Run diagnostic applications such as PING and TraceRoute • Reference manufacturers manuals and information to improve or maintain existing systems • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Marketing, Entrepreneurship</p>
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DOMAIN: 7.0	To provide technical support to a small company or home through maintenance, repair and configuration of PC hardware and simple network systems (Aim #CN2) ---CONTINUED---		
Ref. #	Standard Name	Competencies	

<p>7.3_C</p>	<p>Install, configure and operate basic small peer-to-peer and client server networks</p>	<ul style="list-style-type: none"> -apply knowledge of basic network architecture to meet requirements for network operation and security -configure network hardware components including NIC's and data distribution equipment -implement appropriate software protocols to enable communications across network(s) -determine suitability of hardware to network requirements -perform basic network administration tasks -implement policies and procedures to ensure security and reliability of network data -perform basic network cabling installations and testing -create network documentation in written and diagrammatic forms -use software and utilities to ensure network performance and functionality meets design specifications -provide basic user support to ensure that network users can correctly perform network 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Install NOS and connect Client to server • Configure local and network printer • Configure network connections (dial-up / high speed) • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade • Run system diagnostics Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Install and configure desktop control such as DeepFreeze • Run diagnostic applications such as PING and TraceRoute • Reference manufacturers manuals and information to improve or maintain existing systems
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		<p>operations -understand relationship between the role of the network and how it supports business functions</p>	<ul style="list-style-type: none">• Participate in Technical Call Centre / Help Desk simulation• Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Marketing, Entrepreneurship</p>
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DOMAIN: 7.0	To provide technical support to a small company or home through maintenance, repair and configuration of PC hardware and simple network systems (Aim #CN2) ---CONTINUED---		
Ref. #	Standard Name	Competencies	
7.4_C	Diagnose, identify and repair basic faults with networks	<p>-apply knowledge of network hardware, software and operating systems to perform first level network technical support functions</p> <p>-operate basic network diagnostic equipment</p> <p>-operate basic network diagnostic software</p> <p>-communicate with network users and other staff to determine if problems exist and if so to determine extent</p> <p>-apply company procedures and guidelines to network troubleshooting process</p> <p>-perform routine network administration tasks to resolve perceived network problems</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Install NOS and connect Client to server • Configure local and network printer • Configure network connections (dial-up / high speed) • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade • Run system diagnostics Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Install and configure desktop control such as DeepFreeze

		<p>-work in a quick, efficient and conscientious manner to resolve network problems with minimal other disruptions to users</p>	<ul style="list-style-type: none">• Run diagnostic applications such as PING and TraceRoute• Reference manufacturers manuals and information to improve or maintain existing systems• Participate in Technical Call Centre / Help Desk simulation• Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, CISCO, Network +</p>
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SECTION III Specific to the IT Security Concentration

DOMAIN: 8.0	To apply knowledge of common utility software programs and home security devices to address IT security and privacy related problems (Aim #S1)		
Ref. #	Standard Name	Competencies	
8.1_S	Research, identify, install, configure, operate and evaluate software products which provide secure and private IT operations	<ul style="list-style-type: none"> -understand relationships between, security/privacy as they relate to business functions -perform basic security threat analysis and provide related recommendations -create basic security-related documentation -update and apply security practices in accordance with company policy -install and configure basic security related software that enhances integrity of business systems -apply basic cryptographic processes to aid business functions 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Install NOS and connect Client to server • Configure firewall and router • Attempt breach of security with “ethical hacking” • Perform data recovery for compromised storage • Perform audit to track intruder following policies of Computer Forensics as established by Federal Law • Configure network connections (dial-up / high speed) • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade

		<p>-perform basic tests to determine effectiveness of security implementation</p>	<ul style="list-style-type: none"> • Run system diagnostics Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Install and configure desktop control such as DeepFreeze • Run diagnostic applications such as PING and TraceRoute • Reference manufacturers manuals and information to improve or maintain existing systems • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Security +</p>
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<p>8.2_S</p>	<p>Research, identify, install, configure, operate and evaluate basic hardware products which provide secure and private IT operations</p>	<p>-identify and describe hardware devices and equipment that enhance network security</p> <p>-install a home Internet firewall product and configure for secure operations</p> <p>-create strategies to evaluate success or failure of hardware implementations</p> <p>-perform testing to evaluate whether security objective has been met</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> •Configure home firewall and router •Configure network connections (dial-up / high speed) •Perform routine hardware and software maintenance on a computer •Run system diagnostics Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 •Install and configure desktop control such as DeepFreeze •Run diagnostic applications such as PING and TraceRoute •Reference manufacturers manuals and information to improve or maintain existing systems •Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Security +, Network +</p>
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DOMAIN: 9.0	To demonstrate a basic understanding of how hardware and software configurations can provide a secure IT environment. (Aim #S2) ---CONTINUED---		
Ref. #	Standard Name	Competencies	

<p>9.1_S</p>	<p>Integrate hardware, software, and operational techniques to produce a secure IT work environment</p>	<ul style="list-style-type: none"> -identify security related software products -install, troubleshoot and configure hardware and software products to maintain or enhance business IT environment -develop and implement basic IT policies to assist in reducing “malware” affects on corporate IT environments -perform a basic corporate security audit -maintain security related hardware and software through application of updates and security patches -install and configure an Ethernet wireless network access device for enhanced security -apply security systems to locate and install software tools for intrusion detections -follow simulated company procedure for an intrusion incident 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Run system diagnostics Install, configure and report on diagnostic software such as Norton, McAfee, PC Doctor or NOD32 • Run diagnostic applications such as PING and TraceRoute • Install Spam Filter • Configure firewall and router to control inbound traffic • Configure firewall to filter outbound requests and to prohibit connections with potential threat sites • Perform audit to track intruder following policies of Computer Forensics as established by Federal Law • Configure network connections (dial-up / high speed) • Install WiFi and set WEP, MAC address connection limitations • Setup VPN for high speed and dial up network
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		<p>-work in an ethical manner</p> <p>-perform work activities to secure corporate data/knowledge</p>	<ul style="list-style-type: none"> • Perform routine hardware and software maintenance on a computer • Remove and replace components for repair and upgrade • Reference manufacturers manuals and information to improve or maintain existing systems • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Computer Engineering, Computer Science, Cooperative Education, Security +</p>
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SECTION IV Specific to the Database Systems Concentration

DOMAI N: 10.0	To understand how IT database software may support an organization in achieving its goals more efficiently (Aim #D1)		
Ref. #	Standard Name	Competencies	
10.1_D	Demonstrate an understanding of how companies use information	<p>-able to determine what data are collected by companies and how they are used.</p> <p>-relate company data to applicability for use in databases</p> <p>-demonstrate knowledge of how databases support business functions and operation</p> <p>-able to effectively use the Internet to conduct research</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Define market basket analysis • Define and apply an Apriori algorithm • Build a SQL data base • Develop and administer a knowledge discovery survey <p>Skills can be acquired through classes or courses within the Secondary program such as Marketing, Entrepreneurship, Urban or Human Geography, Mathematics (statistics), Data Processing, Computer Engineering, Computer Science, Cooperative Education, Business Studies and International Business</p>

10.2_D	Describe how relational databases are used in the retail market to help companies become more efficient	<p>-conduct research into the use of RFID tagging</p> <p>-describe how companies use databases and information to maintain inventories, record sales and determine store layout</p> <p>-perform research through online investigations, site visits and interview techniques</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Report the ethics of RFID • Explain inventory control and stock shrinkage • Develop sample retail layouts based on customer tracking <p>Skills can be acquired through classes or courses within the Secondary program such as Marketing, Entrepreneurship, Urban or Human Geography, Mathematics (statistics), Data Processing, Computer Engineering, Computer Science, Cooperative Education, Business Studies and International Business, Law (Canadian)</p>
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DOMAIN: 11.0		To apply knowledge of common database software programs in setting up a relational database or integrating a web site with a database (Aim #D2)	
Ref. #	Standard Name	Competencies	
11..1_D	Install, configure and operate common industry-standard database application software	<ul style="list-style-type: none"> -perform research to determine major relational database products along with associated feature set -evaluate database products for suitability to task -install, troubleshoot and configure database software -manage a relational database program -create a simple relational database to meet the needs of a company task or function -create basic queries and professional reports -create database documentation including a basic entity relationship diagram 	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Conduct Internet research using Boolean Logic to limit data • Review public SQL data bases over the internet, such as MLS • Install database software such as Filemaker or Access • Build a SQL data base • Develop and administer a knowledge discovery survey • Provide report or presentation to reflect differences in data collection and interconnection <p>Skills can be acquired through classes or courses within the Secondary program such as Marketing, Entrepreneurship, Urban or Human Geography, Mathematics (statistics), Data Processing, Computer Engineering, Computer Science, Cooperative Education, Business Studies and International Business</p>

DOMAIN: 11.0	To apply knowledge of common database software programs in setting up a relational database or integrating a web site with a database. (Aim #D2) --- CONTINUED---		
Ref. #	Standard Name	Competencies	
11..2_D	Assist and support users in the routine operation of common computer database software	<p>-maintain a written log showing all incidents and their resolution</p> <p>-provide customer support and troubleshooting for database related issues</p> <p>-correct problems in the database</p> <p>-apply patches or updates to the database software in order to solve problems</p>	<p>As reported by the Teacher (report card/ letter) and as demonstrated by documentation / reference letters the student is able to:</p> <ul style="list-style-type: none"> • Document data base activity and all incidents of data errors • Correct Field and Record problems with proper data and link SQL as required • Develop user manuals that can form a Knowledge base for customer support • Reference manufacturers manuals and information to improve or maintain existing systems • Apply software upgrades when required • Participate in Technical Call Centre / Help Desk simulation • Complete diagnostic reports and forms <p>Skills can be acquired through classes or courses within the Secondary program such as Data Processing, Computer Engineering, Computer Science, Cooperative Education</p>

