

SHSM New Program Application Planning

Board	Limestone District School Board
School Name	Bayridge Secondary School
Sector	Information and Communications Technology
Existing SHSMs at the School	Hospitality and Tourism, Environment, Arts and Culture

Data since Last Application Submission

<p>Currently 43 students enrolled in the Bayridge Computer Science Program (BCSP). Grade 9 - 12 Students Grade 10 - 13 Students Grade 11 - 8 Students Grade 12 - 9 Students</p> <p>Digging Deeper into the current Grade 12 student profiles, if this program was approved last year all 9 of these students would have all components (except in some cases missing a co-op credit) otherwise would have graduated with the SHSM. The criteria of the BCSP Program in many ways far exceeds the requirements for the Information and Communication Technology SHSM when it comes to certification and reach ahead opportunities.</p> <p>All students below would be University Pathway SHSM Students. Micheal - all components would need 1 coop. Yuet - all components would need 2 coop Wyatt - all components would need 1 coop Karisha - all components would need 2 coop Aydan - all components would need 2 coop Alexander - all components would need 2 coop Jonathan - all components would need 2 coop Hayden - all components would need 2 coop Mitch - all components would need 2 coop</p> <p>Above are just the students who have signed up for the BCSP Program currently. When looking at SHSM Potential students using the myBlueprint tool there are at least 15 other Grade 12 university pathway students who would meet the SHSM Courses Component (with exception of Coop). In addition 10 Grade 12 college pathways students who would meet the SHSM Course Components (exception coop).</p> <p>Recognizing that coop is a gap for some of the students Jon has created many new partnerships to build the opportunities for students to complete the coop component. Given the school has minimal co-op sections, in many ways the students have completed many</p>

outreach hours that have just not been counted under a co-op credit. Jon has already started conversation with his team to further expand coop sections for next year and will look to apply for the expansion funding as well in hopes to have a section of coop specific to meet the needs of SHSM students.

New this year, based on student voice, some new clubs have been initiated that include the following: website creation, cybersecurity group, robocode, minecraft club and live streaming club. Many of these clubs are connected to community contact and giving back. It is important to note there are some students in the clubs that are outside of the student registered currently in the BCSP.

BCSP students are always looking at ways to engage their feeder schools in computer science. This year with the help of student BCSP leadership they engaged over 800 students in the Beaver Computing Challenge. Even with the challenge of being virtual BCSP students were able to connect with educators in Grade 7 & 8 classes to support as students prepared for the contest as well as the day of the event.

Current Promotional Materials:
Program Website: [Click Here](#)

SHSM Program Details

How will the proposed program complement existing SHSM programs in the school?

We offer SHSMs in Environment, Hospitality and Tourism and Arts and Culture. Adding Information and Communications Technology will only enhance the work we do in each of these SHSMs:

- the I&CT SHSM will help with bridging the tech to the university pathway student, and help these students see it as applicable to their U pathway
- as STEAM (Science, Technology, Engineering, Arts and Mathematics) is a strength and focus at BSS, the connection between our Tech Design and Comm Tech programs supports students our SHSM's - Reach Ahead activities and Certifications can be shared
- with a goal of growing the 21st Century Learning Skills across the curriculum at BSS, helping students see the connection between these sectors is crucial for success in any of the areas
- having 4 SHSMs offered at BSS will help us to focus on offering the best selection of major credits, which often cross sectors, thereby one program can indirectly support enrollment in others programs
- opportunities will be created to support cross-sector experiential learning and reach aheads i.e. I&CT with Environment could see students creating a program to address the climate crisis or another environmental concern more locally.

Identify and issues and concerns in existing SHSM programs and how these are being addressed.

We are no longer able to support our Justice, Community Safety and Emergency Services SHSM - and are willing to have it go to another school in Limestone.

SHSM Program Description

Describe any unique or special features about your program.
e.g. area of focus

This SHSM would be extremely valuable for any students with a strong interest in Information Technology. Students will cover the following topics:

A. Computer Programming

Students would learn computer programming in various forms. One form of programming they would learn would be web design where they would learn HTML/CSS/JS to create websites. Ultimately, the students would connect with non-profit organizations in the community (i.e. charities, volunteer-based organizations) to create a website for them.

B. Computer Hardware

Also, students would learn about and do a certification on computer hardware so that they could understand the foundations of how computer systems work. They would learn to identify computer parts, understand what each component does and ultimately build entire systems. It is possible that these finished computer systems could be donated to people in need.

C. Computer Networking

They would also learn about and do a certification on computer networking where they would learn how to secure a wireless network, how the Internet works and so on. There are many programs, at both the college and university levels, that focus on computer networking and it is a skilled trade that is in demand right now. Students would also be able to compete in Skills Ontario competitions in Networking.

D. Artificial Intelligence

In addition, there will be a focus on artificial intelligence, which is a rapidly growing field in the world of technology. Students will learn how AI is changing the world, how it works and focus on machine learning. Students would take a field trip to Queen's to see Dr. Josh Marshall ([People - Joshua Marshall](#)) who works in the field of AI and learn about the Internet of Things.

E. Cybersecurity

Students would also get some background and do a certification in cybersecurity – a field that is severely lacking in trained professionals. There are courses online that are excellent for high school students and we would look to get some industry professionals (i.e. <https://www.weehooey.com>) in to talk to students about the field and opportunities therein.

F. Websites and Databases

Students would be exposed to databases and learn how to use them in conjunction with websites. They would learn how to create, populate, maintain and query databases using industry standards like MySQL, PHP, SQL. They would learn how to create websites that pull data from these databases and take user input and put it into databases. This structure is the foundation of how Internet websites function. Students would work with people in the community who need websites and create something specifically for them. In fact, we already have a student doing a co-op building a web-enabled database (more later on this).

G. UNIX / LINUX

Lastly, students would be exposed to Linux and Unix programming - a very specialized skill in the ICT world. Linux is a special operating system used for its stability and security and with proper knowledge, students can create web servers, databases and more. It is possible to plan field trips to places in our community where there are people who work with Unix and Linux on a daily basis.

In addition, students will learn to combine their computer-based skills in other courses through CLAs and they will have the opportunity to pass on their knowledge by doing outreach work with our feeder schools (which are within walking distance).

What is the rationale for offering this SHSM sector specifically at this school? (i.e. student interest and community support).

Bayridge has experienced an explosion in interest in computer science and technology in the past few years. The number of computer science sections at the school in 2017 was 1 and in 2019 there were 6 sections offered, including a grade nine section. Through their course selection choices, students are displaying great interest. Our school is primed to become a centre of excellence in the topic of computer science.

Bayridge has been doing outreach to feeder schools for the past three years, both going out to schools and running workshops and also hosting feeder school in our computer lab, building interest and developing relationships between schools and students. This outreach means that students are coming into grade 9 with more knowledge and passion for the subject than ever before.

In addition, the school consistently leads the board in computer science extracurricular activities. A whopping 85 grade 9/10 students wrote the Beaver Computing Challenge from the University of Waterloo in November (about 10 times more than any other school in our board) and approximately 15-20 senior students are expected to write the Canadian Computing Competition coming in February.

Teacher expertise already exists at the school. Mr. Swaine has experience in the work world having been a computer programmer at Queen's before becoming a teacher and recently having been selected by Queen's Engineering Outreach to attend the Actua Teachers Conference in Ottawa, while Mr. Firth has fantastic knowledge of robotics and is part of the Kingston Robotics club.

Through our teachers, our school has very strong relationships with Canada Learning Code, Queen's Women in Engineering, the Queen's Centre for Neuroscience, Math and Computing (CEMC) at Waterloo, Queen's Engineering Outreach, Queen's Computer Science and St. Lawrence College, just to name a few.

Identify two or three strategies that will ensure participation of students in all four pathways in this SHSM program.

Some of the strategies used to attract students to the SHSM program are:

- Description of the program at grade level course selection assemblies,
- Promotion of the program in classes of all levels by teachers,
- Promotion at parent and new student nights,
- Posters in student services and around the school,
- Individual counselling by teachers and student services.

What is the labour market rationale for offering this SHSM sector specifically in this school? Please provide relevant local labour market data and environmental scans.

There is a major shortage of skilled professionals in almost every area of computer science. The topics covered in this SHSM will address many of those shortages.

According to the Conference Board of Canada, the largest skills gap in Canada's workforce is currently in engineering and infrastructure. Manufacturing is fourth and ICT is sixth. These areas all come under the umbrella of this SHSM program.

In Kingston specifically, there are known labour market opportunities in:

- Automated manufacturing
- Computer and network technicians
- Software development
- IT security
- Engineering

(Sources: wowjobs.ca, workopolis.com, keys.ca)

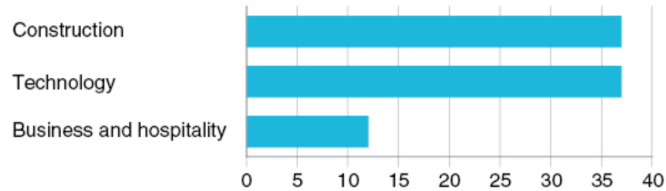
“Between 2016-2020, it’s expected that Canada will generate approximately 218,000 tech jobs, however some of these will be left vacant. In 2015, only 6% of the country’s graduates specialized in an ICT field, despite the sector’s rapid growth. In order to avoid serious economic consequences, Canada must develop ways to address this technical skills gap.”

- [Avoiding Canada's Impending Tech Sector Skills Shortage](#)

Even in specialized sectors, there is a significant shortage of people who have the ability to use digital skills in their vocation:

"Despite the high interest of job searchers in automotive and mobility-related careers, companies and recruiters find it very challenging to acquire and retain qualified talent that possesses the specialized skill sets required for new mobility technologies. This is attributed to an overall shortage in workers with digital skills, and, most importantly, to the advanced and broad combination of skill sets needed to develop the automotive and mobility technologies of the future."

The following infographics from the Conference Board of Canada also illustrate the current lack of skilled technology workers:



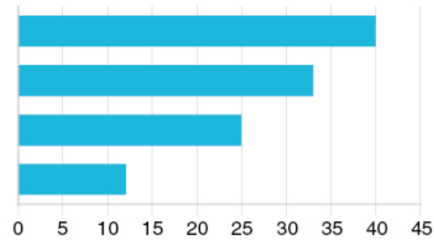
What do employers need?

We surveyed over 1,500 Ontario employers employing over 750,000 people. They say they are in need of the following kinds of post-secondary credentials.

57% of employers want employees with a
2 or 3 year college diploma



Engineering and technology
Business, finance, and administration
Computers and telecommunications
Education, community, and social services



More specifically, there are shortages in the following areas:

NETWORKING:

Demand for employees in the information technology (IT) industry, including network engineers, is soaring while the supply of candidates is running low. In fact, according to Forbes¹, in 2015, the job postings in IT went up 74 percent over the previous five years and there were over 200,000 current job vacancies in the industry. The U.S. Bureau of Labor Statistics² (BLS) reports that just over three-quarters of those job vacancies were for network engineering positions.

Source: <https://www.cybrary.it/blog/2018/06/network-engineering-good-career/>

CYBERSECURITY:

According to the latest Cybersecurity Workforce Study from the world's largest nonprofit association dedicated to IT security, there is currently a massive cybersecurity workforce shortage on a global basis. Around the world, there are currently 2.8 million cybersecurity professionals. It would take a 145% increase in the number of these professionals in order to fill the current estimated need for 4.07 million cybersecurity professionals.

Source:

<https://www.cpomagazine.com/cyber-security/cybersecurity-workforce-shortage-continues-to-grow/> - article dated November 2019

DATABASES:

For Database analysts and data administrators, over the period 2017-2026, new job openings (arising from expansion demand and replacement demand) are expected to total 17,500, while 16,600 new job seekers (arising from school leavers, immigration and mobility) are expected to be available to fill them.

Source: <https://www.jobbank.gc.ca/marketreport/outlook-occupation/17882/ca>

Useful resource to obtain labour market information:

- Ontario Labour Market: <http://www.ontario.ca/page/labour-market>
- Ontario WorkinforNet: <http://www.iwin.on.ca>

SHSM Team

Who is/will be on the school's SHSM team that will have the responsibility to implement this SHSM if approved?		
	Name	Responsibilities (specific tasks)
SHSM Board Lead	Geoff Petznick	Budget, Implementation, Reporting and administrative duties
Board program consultant/coordinator	Geoff Petznick	Budget, Implementation, Reporting and administrative duties
Community Sector representative(s)	Dr. Josh Marshall	Consulting for next steps, certifications, job prospects and pathways
Special education teacher	Claudine Elvidge	Student support
Student Success teacher	Vicki McConnell	Student support
School administrator(s)	Heather Hight	School Principal
Guidance teacher(s)	Michelle Sharpe	School Student Services Head and lead of SHSM
Cooperative education teacher(s)	Graham Pixley	Co-op placements
Major credit teacher(s)	Jon Swaine Kevin Firth	Computer Science Robotics and Tech Design
Teacher of 'other required' courses	Jaime Swaine Jessica Farnell Athena Lees Todd Kartye Brenda Scarlett	Mathematics English Art Science Environment

SHSM Students

How will SHSM students be selected/identified for the program? Select all that apply.	
Interview	<input type="checkbox"/>
Application	<input type="checkbox"/>
Self-identify through course selection	X
Parent approval required	X
Other _____ (add more details here)	<input type="checkbox"/>

SHSM Enrolment

Enter the projected enrolment for this SHSM program:	Grade 11	Grade 12	Total
Projected enrolment for this SHSM program 2021-2022 (next school year):	10	15	25
Enter total student enrolment for school:	Grade 11	Grade 12	Total

Projected total student enrolment for 2021-2022 (next school year):	114	129	520
---	-----	-----	-----

CLA's Implementation

Contextualized Learning Activities (CLA) are meaningful experiences that allow students to engage in SHSM focused activities while participating in "Other" credits. CLA funding is available if the school acknowledges they will be participating in this optional requirement.		
Will the school be engaging in CLAs during the 2021-2022 school year	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Sector-Partnered Contextualized Component Implementation

What Sector-Partner Contextualized Components will SHSM students engage in next school year? Select all that apply.	
Innovation, Creativity and Entrepreneurship	<input checked="" type="checkbox"/>
Sector-delivered Coding	<input checked="" type="checkbox"/>
Sector-delivered Mathematical Literacy	<input checked="" type="checkbox"/>

Industry/Business/Community Partners (copy/paste more boxes as required)

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.	
Organization Name:	Canada Learning Code
Contact Person:	Jessica Bredschneider
Job Title:	Kingston - Chapter Lead
Phone Number:	613-985-7054
Email Address:	jessica.bredschneider@canadalearningcode.ca
Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..	
Jessica runs the Kingston chapter of Canada Learning Code – an organization that runs coding workshops and sessions for adolescents looking to learn and enhance their skills. Jessica and her team are very good at running workshops and hosting students to teach them about different coding techniques and skills.	

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.	
Organization Name:	Weehoey Computer Services
Contact Person:	Jacob Coy and Holden Smallbill
Job Title:	System Administrator
Phone Number:	613-344-2068
Email Address:	support@weehoey.com
Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..	
Weehoey is a company that has expertise in many areas of computer science, but more specifically in cybersecurity and securing networks. Jacob and Holden are both former students of Mr. Swaine and they	

have expressed interest in guest speaking and providing other opportunities for students to learn more about this area of computer science.

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.

Organization Name:	City of Kingston
Contact Person:	Scott Tulk
Job Title:	Manager, Digital Transformation, Architecture and Planning at City of Kingston
Phone Number:	613-546-4291, ext. 2397
Email Address:	sjtulk@cityofkingston.ca

Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..

Mr. Tulk directs various projects for the City of Kingston and often liaises with schools, hiring students to take on projects that can last anywhere from a month to a year or more. Mr. Tulk expressed great interest upon hearing about this project and was looking forward to making partnerships in the community. It is possible that this could be a source of co-op placements in the summertime for high school students.

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.

Organization Name:	Can-Fab
Contact Person:	Denis Levecque
Job Title:	Consultant
Phone Number:	613-985-7054
Email Address:	den.labrecque@outlook.com

Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..

Denis contacted us looking for students to create a client inventory system. Something that their employees could access where they could look up order numbers and see exactly what was ordered. Apparently, their customers were frustrated when they would call FabCut and there was little record of an order that was placed. So, they know they need to modernize and we can help them do that by designing a database and user interface for their employees. This would be over 100 hours of work and they would pay \$14/hour.

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.

Organization Name:	Bayridge Secondary School
Contact Person:	Vicki McConnell
Job Title:	Student Success Teacher
Phone Number:	613-389-8932
Email Address:	mcconnellv@limestone.on.ca
Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..	
<p>Vicki and Mr. Steve Gambicourt designed a website dedicated to showing our school off to grade 8s, but this website will need to be updated and revamped on a regular basis. This involves communication with school admin and student success along with skills in web design, graphics and so forth. This is well over 100 hours of work and is an “endless” job. The student would be responsible for updating, adding and maintaining the site.</p>	

Industry/Business/Community Partners – It is expected that these partners will sit on your sector-specific teams and provide experiential learning opportunities for students (co-op, job shadowing, etc.). If approved, you may be required to provide evidence support (e.g. e-mail or letter) from your partner.	
Organization Name:	Bayridge Secondary School
Contact Person:	Michelle Sharpe
Job Title:	Student Services Head
Phone Number:	613-389-8932
Email Address:	sharpem@limestone.on.ca
Clearly describe the types of support offered by this partner. Be detailed here – e.g. providing 3 co-op placements, guest speaking at career fair, hosting a factory tour, etc..	
<p>In grade 9, students learned how to code using Minecraft EDU. The school thought it would be an amazing idea to build Bayridge using code ... in Minecraft! The idea is that (once finished) we can post the Minecraft World online and the general public (including prospective BSS students) could go to the site and enter the BSS Minecraft World and explore our school, including the rooms and teachers in the building. A virtual Minecraft tour of BSS, if you will. This co-op opportunity involves well over 100 hours for at least 2 students.</p>	

College/University Partners (copy/paste more boxes as required)

College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.	
Organization Name:	Queen’s University, School of Computing, Queen’s Women in Computing
Contact Person:	Wendy Powley
Job Title:	Assistant Professor, founder of the Ontario Celebration of Women in Computing

Phone Number:	613-533-6734
Email Address:	wendy@cs.queensu.ca
Role – clearly describe the types of support offered by this partner.	
<p>Wendy has been in to Bayridge many times along with her group (QWIC – Queen’s Women in Computing) to talk about the myriad of opportunities available to young girls in the field of computing. She has expressed that she has multiple opportunities for students to work with her as part of the SHSM.</p>	

<p>College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.</p>	
Organization Name:	Queen’s University, High Performance Computing Lab
Contact Person:	Chris MacPhee
Job Title:	Assistant Director of Operations at the Centre for Advanced Computing
Phone Number:	(613) 533-2561
Email Address:	chris.macphee@gmail.com
Role – clearly describe the types of support offered by this partner.	
<p>Chris has been in touch to talk about possible work placements for Bayridge students at the High Performance Computing Centre. Nothing concrete yet, but he is very interested in our program and working with us, as his son (Jacob) graduated from BSS and took computers in 2018.</p>	

<p>College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.</p>	
Organization Name:	Queen’s University, Ingenuity Labs
Contact Person:	Dr. Josh Marshall
Job Title:	Director of Ingenuity Labs at Queen’s University
Phone Number:	613 533 6000 ext. 32921
Email Address:	joshua.marshall@queensu.ca
Role – clearly describe the types of support offered by this partner.	
<p>Dr. Marshall runs the research lab at Queen’s University . The Ingenuity Labs Research Institute is a collaborative research initiative at Queen’s University focused on creating intelligent systems and robotic machines that enhance human productivity, safety, performance, and quality of life. He has expressed a keen interest in getting involved with students at the high school level.</p>	

College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.	
Organization Name:	Queen’s University, Faculty of Education
Contact Person:	Richard Reeve
Job Title:	Associate Professor of Information and Communication Technology
Phone Number:	613 533 6000 ext. 77296
Email Address:	reever@queensu.ca
Role – clearly describe the types of support offered by this partner.	
Richard is a professor at Queen’s University who has a keen interest in ICT in education. Richard and Jon Swaine met in 2019 at a conference where we found many common interests and we have already teamed up on a few projects locally. This semester, we intend on working together to create an online computer science “contest” for elementary school students. This partnership could provide a number of different projects for SHSM students to get involved with.	

College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.	
Organization Name:	Queen’s University, Faculty of Engineering
Contact Person:	Scott Compeau
Job Title:	Manager - Connections Engineering Outreach at Queen's University
Phone Number:	613-533-6000 ext. 75640
Email Address:	scott.compeau@queensu.ca
Role – clearly describe the types of support offered by this partner.	
Scott and his team have been working closely with our school. People from Queen’s Engineering Outreach have come in to speak to students on multiple occasions and one of our teachers (Jon Swaine) has attended PD in Ottawa with a few members of the Queen’s Engineering Outreach team, building their relationship.	

College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.	
Organization Name:	St.Lawrence College
Contact Person:	Andrea Ruskin
Job Title:	Coordinator, Professor, St Lawrence College, UX Design Program.
Phone Number:	613-544-5400
Email Address:	ARuskin@sl.on.ca
Role – clearly describe the types of support offered by this partner.	

Andrea is able to set up opportunities to come to St. Lawrence College where she hosts workshops on programming, web design and other computer related skills.

College/University Partners – If possible these individuals should sit on your sector-specific or board-specific advisory teams. Please explain how these partners will offer experiential learning and reach ahead opportunities. If approved, you may be required to provide evidence of support (e.g. e-mail or letter) from your partner.

Organization Name:	University of Waterloo, CEMC
Contact Person:	Troy Vasiga
Job Title:	Associate Dean Undergraduate Admissions and Outreach
Phone Number:	519-888-4567 x36937
Email Address:	troy.vasiga@uwaterloo.ca

Role – clearly describe the types of support offered by this partner.

I have connected with Troy multiple times to set up computing contests for students in our school, but also to arrange visits from members of the University of Waterloo to talk about problem solving and opportunities in the field.

Certifications and Training (copy/paste more boxes as required)

Consider alternative ways to deliver certifications and training such as sector-delivered, train-the-trainer model, online.

Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:

Title/Focus of Certification or Training Program:	First Aid
Provided by: (range of providers)	St. John's Ambulance
Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	Two-Day Course

For elective certifications please explain how this certification relates to your program's area of focus:

Notes: List any other certifications that are not on the dropdown list above:

--

Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:	
Title/Focus of Certification or Training Program:	WHMIS
Provided by: (range of providers)	Josie Mitchell
Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	Classroom instructor
For elective certifications please explain how this certification relates to your program’s area of focus:	
Notes: List any other certifications that are not on the dropdown list above:	

Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:	
Title/Focus of Certification or Training Program:	CPR and AED
Provided by: (range of providers)	St. John’s Ambulance
Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	
For elective certifications please explain how this certification relates to your program’s area of focus:	
Notes: List any other certifications that are not on the dropdown list above:	

--

Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:	
Title/Focus of Certification or Training Program:	Cybersecurity/Safe Computer Use Certification Program
Provided by: (range of providers)	Ryerson University
Organization Name:	CanHack
Contact Person (if available):	Naveed Tagiri
Delivery Type (select one):	Online weekly courses
For elective certifications please explain how this certification relates to your program’s area of focus:	
<p>Cybersecurity is a massive field right now and there is an enormous need for trained professionals in the field. Students will complete a cybersecurity certification and they will have some background in the field, allowing them to move to the next step towards helping fill this need in industry.</p> <p>Students will participate in online courses that teach them about cybersecurity - both the technical aspects and understanding how to go about starting in a career in the field. They are especially focused on getting women involved in cybersecurity. This link has more about their free program.</p> <p>“In seeking to bolster their cybersecurity posture, many organizations struggle to find the right talent to lead these initiatives. That’s because our country faces a growing cybersecurity skills gap. Research from Deloitte shows this lack of talent is being felt across corporate Canada and, unfortunately, it is more than a temporary issue. Critical roles are going unfilled, and it’s expected that organizations across Canada will need to fill an estimated 8,000 additional cybersecurity positions by 2021.”</p> <p>Source: https://policyoptions.irpp.org/magazines/july-2019/the-critical-shortage-of-cybersecurity-expertise/ - article dated July 2019</p>	
Notes: List any other certifications that are not on the dropdown list above:	

Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:	
Title/Focus of Certification or Training Program:	Network Certification
Provided by: (range of providers)	
Organization Name:	
Contact Person (if available):	

Delivery Type (select one):	
For elective certifications please explain how this certification relates to your program's area of focus:	
<p>Computer networks are everywhere, whether Bluetooth or LAN or wireless, and students need to understand the basics of networking - the hardware, software and various protocols. Learning about this will also give students the ability to compete at Skills Ontario.</p> <p>"Computer networking professionals are in demand, according to a study done by IT Career Finder, network administrator job is ranked in top 10 positions. The 10-year growth is 5% as fast as average and rapid adoption of mobile devices, and cloud computing will lead to increased job opportunities.Sep 30, 2019"</p> <p>https://biztechcollege.com/7-tips2/</p>	
Notes: List any other certifications that are not on the dropdown list above:	

<p>Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:</p>	
Title/Focus of Certification or Training Program:	Hardware Certification
Provided by: (range of providers)	
Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	
For elective certifications please explain how this certification relates to your program's area of focus:	
<p>Students will learn about all of the various components inside a computer and they will gain experience building and taking apart computers. Learning about the basic components and how to build, repair and take apart machines will only enhance their skill set.</p>	
Notes: List any other certifications that are not on the dropdown list above:	

<p>Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:</p>	
Title/Focus of Certification or Training Program:	Website Design and Database Training
Provided by: (range of providers)	

Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	
For elective certifications please explain how this certification relates to your program's area of focus:	
<p>Most websites these days are database driven where the information is held in databases and code is written to take that information and display it to the user. Students will learn this skill, which will also allow them to compete at competitions run by Skills Ontario and the Limestone DSB.</p>	
Notes: List any other certifications that are not on the dropdown list above:	

<p>Certifications and Training Courses and Programs – Quality SHSM programs have a blend of community and school based delivery to ensure students have exposure to experts in this sector. Identify certifications and training courses/programs to be offered to students in YYYY/YY:</p>	
Title/Focus of Certification or Training Program:	UNIX and LINUX Certifications
Provided by: (range of providers)	
Organization Name:	
Contact Person (if available):	
Delivery Type (select one):	
For elective certifications please explain how this certification relates to your program's area of focus:	
<p>UNIX/LINUX is a very widely used operating system in industry and it powers the computers of some of the largest businesses/organizations in the world. Students would learn the basics of administering these systems, learning to install the operating system itself and then learning about security and using these systems as servers for various uses, such as website hosting.</p>	
Notes: List any other certifications that are not on the dropdown list above:	

Pathway Chart (MICHELLE)

SHSM Major Subjects							
Apprenticeship		College		University		Workplace	
11	12	11	12	11	12	11	12
ICS3C	ICS4C	ICS3C	ICS4C	ICS3U	ICS4U	ICS3C	ICS4C
AWQ30	AWQ4M	AWQ30	AWQ4M	AWQ30	AWQ4M	AWQ30	
TCJ3C	TCJ4C	TCJ3C	TCJ4C	SPH3U	SPH4U	TCJ3E	TCJ4E
TDJ3M	TDJ4M	TDJ3M	TDJ4M	TDJ3M	TDJ4M	TGJ3O	TGJ4O
TDM4M	TDM4M	TDM3M	TDM4M	TDM3M	TDM4M		
TGJ3M	TGJ4M	TGJ3M	TGJ4M	TGJ3M	TGJ4M		
English							

Apprenticeship		College		University		Workplace	
11	12	11	12	11	12	11	12
NBE3C	ENG4C	NBE3C	ENG4C	NBE3U	ENG4U	NBE3E	ENG4E
	OLC4O		OLC4O		OLC4O		OLC4O
Math							
Apprenticeship		College		University		Workplace	
11	12	11	12	11	12	11	12
MBF3C	MAP4C	MBF3C	MAP4C	MCR3U	MHF3U	MEL3E	MEL4E
		MCF3M	MDM4M	MCF3M	MCV4U		
					MDM4U		
Other Required Credits (refer to Ontario.ca/SHSM)							
Apprenticeship		College		University		Workplace	
11	12	11	12	11	12	11	12
ADA3M	ADA4M	ADA3M	ADA4M	ADA3M	ADA4M	ADA3O	OLC4O
BDI3C	BOH4M	BDI3C	BOH4M	BAF3M	BOH4M	AVI3O	
CLU3M		CLU3M		CLU3U	CLN4U	SVN3E	
SBI3C	SCH4C	SBI3C	SCH4C	SPH3U	SPH4U		
Notes							