



SPECIALIST HIGH SKILLS MAJOR | Policy and Implementation Guide



This document incorporates policy updates issued to the field in 2014, and supersedes the 2010 edition, *Specialist High Skills Major: Policy and Implementation*. It reflects current policy, updated implementation guidelines, and updated resource information. It also includes the sector guide for Food Processing, the SHSM sector introduced in 2014.

Notice that the footer on each page of this document includes the label **Rel. 1: 2014**. These pages should replace pages with the label Rel. 1: 2010.

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Majeure Haute Spécialisation : Politique et guide de mise en œuvre.
This publication is available on the Ministry of Education website, at
www.ontario.ca/education.

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ABBREVIATIONS USED IN THIS GUIDE

BEC	Business Education Council
CAD/CAM	computer-aided design and computer-aided manufacturing
CLA	contextualized learning activity
CPR	cardiopulmonary resuscitation
ECO Canada	Environmental Careers Organization Canada
ESDC	Employment and Social Development Canada
ICT	information and communications technology
IDC	interdisciplinary course
IEP	Individual Education Plan
ILC	Independent Learning Centre
LDC	locally developed course
MISA	Managing Information for Student Achievement
NGO	non-governmental organization
NOC	National Occupation Code
OERB	Ontario Educational Resource Bank
OSP	Ontario Skills Passport
OSR	Ontario Student Record
OSSD	Ontario Secondary School Diploma
OST	Ontario Student Transcript
OYAP	Ontario Youth Apprenticeship Program
PLC	professional learning community
SCWI	School-College-Work Initiative
SHSM	Specialist High Skills Major
TASC	The Alliance of Sector Councils
WHMIS	Workplace Hazardous Materials Information System
WSIB	Workplace Safety and Insurance Board

Look for these highlights for further help, information, and resources.



FIND IT!

For quickly locating more detailed information related to the section you are reading, active links are provided to updated pages in the Policy section as well as to related resources.



INSIGHT

Useful background information, ideas, and suggestions



POLICY

Important information about SHSM policy



SUCCESSFUL PRACTICE

Practical tips and techniques for schools and boards



TOOLS AND RESOURCES

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INTRODUCTION

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I How This Document Is Organized

The *Specialist High Skills Major: Policy and Implementation Guide* outlines the policy governing the Specialist High Skills Major (SHSM) program, includes information on planning and implementing an SHSM program, and provides various relevant resources.

In schools across Ontario, students are building brighter futures through SHSM programs in many varied and exciting high-demand professions. These innovative programs are an important part of Ontario's commitment to providing all students with learning choices and opportunities that genuinely meet their needs, interests, and aspirations, and ensuring that Ontario's education system helps every student achieve his or her highest potential.

This document has been designed to provide the information boards and schools need to develop and implement an SHSM program, based on ministry policy and the experience of educators across the province.

How This Document Is Organized

The document consists of three parts:

Section A details SHSM policy, outlining the requirements for the program in each of the sectors in which it is now offered in Ontario schools.

Section B outlines SHSM implementation, organization, planning, and school considerations.

Section C includes the tools and resources found to be most useful to teachers and administrators.

Additional resources are available on the Ministry of Education website, with supplementary tools and information on each of the SHSM programs.

Useful Tools and Resources

Helpful online tools and resources that support the planning and implementation of SHSMs include:

- the **ministry's SHSM website**, which provides direct links to sections included in this guide as well as to other helpful resources that support the SHSM;
- the **Ontario Educational Resource Bank (OERB)**, a password-protected site, which provides Contextualized Learning Activities (CLAs);
- the **SHSM e-Community website**, a password-protected site that provides educators with opportunities to share resources, including those specifically developed to support SHSM programs.

Throughout the document, look for the “Tools and Resources” icon. It identifies the tools and resources most relevant to each section of the guide.



FIND IT!

Ministry of Education SHSM website
www.ontario.ca/SHSM

OERB:
<http://resources.elearningontario.ca>

SHSM e-Community:
<http://community.elearningontario.ca>

We'd Like to Hear from You!

We hope you find this document useful and informative, and we welcome your comments and suggestions. As the SHSM programs continue to evolve and grow, we will be providing updates so that you always have the most current information. Please send your suggestions to the Ministry of Education's SHSM team by contacting the Student Success Policy Branch at StudentSuccessPolicyBranch@ontario.ca.

2 About the Specialist High Skills Major (SHSM)

The SHSM is a specialized, ministry-approved program that allows students to focus their learning on a specific economic sector while meeting the requirements of the Ontario Secondary School Diploma (OSSD).

SHSMs assist students in their transition from secondary school to apprenticeship training, college, university, or the workplace.

These programs enable students to gain sector-specific skills and knowledge in engaging, career-related learning environments, and to prepare in a focused way for graduation and postsecondary education, training, or employment.



FIND IT!

A1: Components of an SHSM describes the five required components common to all SHSM programs.

A3: Sectors provides detailed information specific to each SHSM program, including information about careers, required credits, certifications and training programs, “reach ahead” opportunities, and experiential learning.

Seven Key Benefits for Students

Pursuing an SHSM enables students to:

1. customize their secondary school education to suit their interests and talents;
2. develop specialized knowledge and skills that are valued by the sector and postsecondary education institutions;
3. earn credits that are recognized by the sector and postsecondary education institutions;
4. gain sector-specific and career-relevant certification and training;
5. develop Essential Skills and work habits that are valued by the sector and are recorded using the tools in the Ontario Skills Passport (OSP);
6. identify, explore, and refine their career goals and make informed decisions about their postsecondary destination;
7. remain flexible, with the option to shift between pathways should their goals and plans change.

3 Overview: The Planning and Implementation Process, Step by Step

A number of important steps are involved in planning, developing, and launching an SHSM. This series of guiding questions is designed to give you a snapshot of the process that will aid your understanding of the more detailed sections later in this guide.

Step 1: Familiarization

REVIEW SHSM POLICY

What are the key components of all SHSM programs? How are individual students' programs structured? What forms of classroom and experiential learning can be offered in an SHSM? What certification delivery models can be considered?

FIND IT!

See [Section A1: Components of an SHSM](#).

EXPLORE SHSM SECTORS

Which specific ministry-approved SHSMs can be offered? What kinds of sector opportunities do they offer students? What postsecondary opportunities might they lead to? What specific components and credits are required in each SHSM?

FIND IT!

See [Section A3: Sectors](#).

Step 2: Organization

ESTABLISH AN SHSM PLAN

What key factors must you consider when developing the strategic plan for the SHSM programs? How will you go about identifying the specific program content, delivery model, and pathways that will provide a high-quality learning experience for students that is valued in the sector? Who should be involved in the process?

FIND IT!

See [Section B1: Organization](#).

ESTABLISH SHSM ADVISORY COMMITTEES

How can you ensure that stakeholders value your SHSM? How can you best align students' experiences with workplace expectations? How will you identify reliable service providers for certification and training? How can you bring all stakeholders together to ensure that your SHSM will provide students with a high-quality learning experience that will support their success in postsecondary education, training, or employment?

ESTABLISH A SCHOOL SHSM TEAM

Who will champion the implementation of the SHSM? Which specific school or board staff members will be critical to the program's success?

BUILD SUPPORTIVE PARTNERSHIPS

What partnerships need to be developed to ensure that your SHSM will be effective and sustainable? Could you partner with other schools or boards to share resources? What opportunities exist to partner with local colleges, training centres, and universities? Which provincial and local sector organizations might support your SHSM and provide opportunities for certification and training? Which employers and organizations might provide cooperative education placements?

Step 3: Planning**SELECT WHICH SHSMS TO OFFER**

Which SHSMs will be of interest to students in your school and region? What are the economic prospects in the region? Will you be able to secure the supports you need in the economic sector and community? Which SHSM(s) does your school and board have the capacity to offer?

FIND IT!

See **Section B2: Planning**.

**CHOOSE A DELIVERY MODEL**

Would the SHSM be best delivered by individual schools for their own students, or could the program be delivered at one school for students from several schools? Could a program be offered entirely or in part at a learning site other than a secondary school? What resources are required and available?

DEVELOP A SCHOOL SHSM ACTION PLAN

What should a detailed implementation plan include? What are the best approaches to timetabling and enrolment? How can you accommodate students with special needs?

OBTAIN MINISTRY APPROVAL

Does your SHSM meet ministry guidelines? If your program is approved, what next steps should you take?

Step 4: Implementation**DEVELOP SHSM PATHWAYS**

How can you ensure that students and parents understand the pathways to successful completion of the SHSM, and the choices available to them? Will students and parents clearly understand how to navigate the pathways to apprenticeship training, college, university, or the workplace?

FIND IT!

See **Section B: Implementation**.



PROMOTE AND DEVELOP THE SHSM

How will you build awareness of and enrolment in the SHSM? How will you ensure that students and parents are aware of the benefits of your program? How will you keep postsecondary partners and sector partners aware and informed?

SUSTAIN AND GROW THE SHSM

How will you encourage a shared sense of responsibility among staff for the success of the SHSM? How will you build knowledge and skills among staff, and work as a team, to provide a high-quality SHSM for students? Who should be involved in your SHSM professional learning community (PLC)?

Step 5: Program Evaluation**MEASURE PROGRAM SUCCESS**

What student management systems and reporting processes need to be in place? How will you measure program success? What indicators should be used to measure success? How can data be used to continuously improve the SHSM, and to respond to changes in the needs of students and the economic sector? Who should be consulted in this ongoing evaluation?

FIND IT!

See **Section B4:**
Program Evaluation.

A. POLICY

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A1. COMPONENTS OF AN SHSM

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AI.I Overview: Components of an SHSM

Each SHSM consists of five required components:

1. Bundled credits

A defined bundle of credits consisting of eight to ten Grade 11 and Grade 12 credits, including cooperative education credits

2. Certification and training

Sector-recognized certifications and training courses and programs

3. Experiential learning and career exploration activities

Experiential learning and career exploration activities within the sector

4. Reach ahead experiences

Learning experiences connected with the student's postsecondary plans

5. Essential Skills and work habits

Development of Essential Skills and work habits required in the sector, recorded using the tools in the Ontario Skills Passport (OSP)

INSIGHT

The requirements of each SHSM are unique and geared to a specific sector. The design of all SHSMs, however, follows the model described here and includes all five components. The specific requirements of each SHSM are detailed in [Section A3: Sectors](#).

In this section you will find a comprehensive description of the five required components for all SHSMs.

POLICY

- An SHSM must be offered in all four pathways: apprenticeship training, college, university, and workplace.
- Students must successfully complete all five required components to earn the SHSM designation on their diploma.
- No substitutions for any of the required components are permitted; however, school boards may add to the SHSM's components to reflect a local emphasis.

Why five components?

The five required components are designed to give students a rich and varied range of curriculum-based and experiential learning experiences, as a foundation for making a successful transition to their chosen postsecondary education or training program or occupation in the workplace.

How were the components designed?

These components were designed to ensure that each SHSM provides a quality program that postsecondary educational and employer partners value and that opens doors for graduates. The components were developed in consultation with representatives of business and industry sectors, unions, sector councils and associations, postsecondary and other educational institutions, training organizations, school boards, and other ministries.

What do graduates receive?

Students who complete the requirements for the OSSD and for the SHSM will receive an OSSD with an embossed SHSM seal on it. Credits earned towards the SHSM are indicated on the Provincial Report Card, and completion of the SHSM is recorded on the Ontario Student Transcript (OST). In addition, students receive an SHSM Record outlining their achievement in the five required components.

AI.2 Bundled Credits

Each SHSM requires completion of a bundle of eight to ten Grade 11 and Grade 12 credits. The bundle consists of:

- four major credits;
- two to four other required credits; and
- two required cooperative education credits.

The credits in the bundle provide students with knowledge and skills particular to, and valued by, the SHSM sector. Therefore, the required credits for each SHSM will vary, depending on:

- the specific sector of each SHSM program;
- the student's chosen pathway to one of four postsecondary options – apprenticeship training, college, university, or the workplace – within each SHSM.

POLICY



- Boards and schools may offer only the SHSMs for which they have ministry approval.
- The credits in each SHSM bundle must be approved by the ministry.
- Unless otherwise stated, no substitutions for the credits in the bundle are permitted, and the credits must be at specified grade levels.

Major Credits

Each SHSM includes four major credits, with at least one Grade 11 and one Grade 12 course in the total of four. The major credits enable students to build a foundation of sector-focused knowledge and skills before they enter a postsecondary destination.¹

Major credits are specific to the destination and may be:

- Ontario curriculum credits;
- ministry-approved locally developed credits (LDCs);
- ministry-approved credits for learning acquired outside the Ontario curriculum, such as dual credits.

1. School boards can nominate courses for use as major credits in the SHSMs they wish to offer, and the ministry maintains a master list of eligible major credit courses for each sector, which it distributes annually to all Ontario boards.

One of the four major credits may be a cooperative education credit related to the sector. (This credit would be additional to the two *required* cooperative education credits in the bundle.)

Are there opportunities for further specialization?

An SHSM can be designed to focus on a specific area within the given sector – for example, the SHSM–Business can focus on entrepreneurship, marketing, accounting, or some other area of business. This focus is achieved through the selection of the four major credits in the bundle. Depending on local circumstances, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. Where a choice of focus areas is offered, students must select one.

Other Required Credits

In addition to the four major credits, an SHSM student must complete two to four other credits from the Ontario curriculum, as required for the SHSM in the particular sector. (One of these credits, as specified for the particular sector, may be substituted by a cooperative education credit in the sector, which would be additional to the two cooperative education credits required in the bundle of credits.)

TOOLS AND RESOURCES



For examples of CLAs created by educators across Ontario, visit the Ontario SHSM e-Community website at <http://community.elearningontario.ca> or the OERB website at <http://resources.elearningontario.ca>

For each of these other required credits, the teacher of the course must incorporate a contextualized learning activity (CLA) – an activity that involves a minimum of six hours of learning, based on the curriculum expectations, that is contextualized to the SHSM sector.

How do CLAs benefit students?

CLAs enable adaptation using sector-specific content, to meet one or more curriculum expectations. CLAs in the other required credits make the course content authentic, relevant, and enable students to connect their learning to their SHSM sector.

How are CLAs delivered?

CLAs can be delivered in various ways:

- to an entire class, some of whose members are SHSM students (recommended)
- to an entire class, all of whose members are SHSM students
- to an individual or a small group of SHSM students within an existing class
- to individual SHSM students, through e-learning or independent study

SUCCESSFUL PRACTICE



Before the CLA is developed or delivered to students, it is beneficial to have the teachers of the other required credits familiarize themselves with the sector-specific knowledge and skills of the SHSM major credits.

For example, in a Construction SHSM, the math teacher might visit the home building site for the construction course to observe how mathematical principles are applied in the calculation of the rise, run, and length of roof rafters.

By contextualizing courses, teachers of the other required credits (such as English or mathematics) gain insight into the relationship between their subject and the sector and can then help the SHSM student make connections between course work and their sector.

Who delivers CLAs?

CLAs are delivered by the teachers of the other required credits (e.g., English, mathematics, science).

Do CLAs require approval?

Teachers may use the CLAs posted to the Ontario Educational Resource Bank and the SHSM e-Community websites. The posted CLAs were developed and submitted by teachers across the province and reviewed and approved by the ministry prior to posting. Teachers may also use CLAs that they have developed for their own students, without seeking ministry approval. All CLAs, whether to be submitted for ministry approval and posted or not, should be developed using the template that has been provided in **Section C: Resources**.

TOOLS AND RESOURCES

See **Section C: Resources** for:

- the CLA template for ministry approval
- a rubric for assessing the quality of the CLA

Cooperative Education Credits

Cooperative education courses provide authentic learning experiences in a workplace setting that enable students to refine, extend, apply, and practise the sector-specific knowledge and skills acquired in the bundle of credits.

How many credits are required?

Each SHSM pathway requires that students complete a minimum of two cooperative education credits in a work placement in the sector.

Wherever possible, cooperative education credits must be tied back to the courses in the SHSM bundle of credits. However, some students are unable to meet this requirement because their timetable allows them only the summer before Grade 11 to complete the two required cooperative education credits. Where this is the case, the Grade 10 Career Studies course (GLC2O) may serve as the related course for the cooperative education credits for an SHSM in any sector, and the Grade 10 Civics course (CHV2O) may be used as the related course for an SHSM in the Environment; Non-profit; or Justice, Community Safety, and Emergency Services sector.

Students who are enrolled in an SHSM program with a university destination should be encouraged to complete their cooperative education credits before Grade 12, so that they can focus on completing the credits they need for admission to the postsecondary program of their choice.

Can additional cooperative education credits be included in the bundle?

Although only two cooperative education credits are *required* for an SHSM, more than two are recommended (if the student's timetable permits), to a maximum of four. Of the additional two cooperative education credits that are allowed:

- one may be used as one of the four major credits;
- one may be substituted for a credit in the Other Required Credits component, as specified in the requirements for the particular sector.

All four cooperative education credits in the bundle must be sector-related.

TOOLS AND RESOURCES

Depending on local circumstances, students may have to complete their cooperative education credits through continuing education (after school, at night school), in the summer, or through virtual cooperative education.

See *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000*, available on the ministry website at www.edu.gov.on.ca/eng/document/curricul/secondary/coop/cooped.pdf.

AI.3 Certification and Training

All SHSMs require six or seven sector-recognized certifications that have been identified through extensive sector consultations. They include:

- three or four compulsory certifications or training courses/programs (e.g., first aid, CPR);
- a specified number of elective certifications and/or training courses/programs, which are selected from a list provided in this guide for each SHSM.

POLICY



The certifications and training courses/programs identified in this guide are specific to each SHSM. Boards and schools offering an SHSM may not:

- substitute other programs for the listed certifications and training courses/programs;
- reduce the required number of certifications and training programs/courses.

School boards and schools may, however, provide opportunities for students to earn additional certifications and complete additional training. This enables boards and schools to customize their programs to reflect a local focus. Schools boards have an opportunity, on an annual basis, to propose additional certifications that are then reviewed by the ministry. If approved, they are added to the list of certification and training programs and posted on the SHSM website.

How do students benefit?

This component of the SHSM enables students to acquire the knowledge and skills related to safe work habits and sector-specific training. In addition, students with sector-recognized certifications and training have an advantage when entering the workforce.

What delivery criteria should be followed?

Certification and training courses/programs must:

- be delivered by a certified trainer – a person recognized by the certification provider or by the sector as an authority (this requirement does not apply to the Workplace Hazardous Materials Information System [WHMIS]);
- include an assessment and evaluation component;
- include, wherever possible, documentation such as a certificate or other proof of completion for the student's portfolio and the student's SHSM Record, which will indicate the title of each certification earned or training course/program completed;
- be recorded and include documentation of the number of hours involved, and the date the certification/training was completed.

FIND IT!



The requirements for certification and training recognized and recommended by the sector are described for each SHSM in **Section A3: Sectors.**

What forms of delivery might be considered?

The following table illustrates the factors schools and boards may want to consider in selecting a certification delivery model.

Certification and Training: Delivery Models

Delivery Model	Advantages	Disadvantages
Industry-delivered	• is current • is sector-recognized • includes a hands-on component • provides exposure to the sector • provides authentic learning	• may be expensive • may present a scheduling challenge
Online training	• is accessible • can be completed any time, during the day, evening, or weekends • requires little supervision • can be cost-effective	• lacks a hands-on component • may not accommodate learners with special needs • may be expensive
Co-delivered by industry/education partner and secondary school	• can be differentiated according to learner needs • fosters partnerships	• requires coordination and scheduling
Teacher-delivered (“train the trainer” model) (teacher is certified to deliver the certification or training program)	• is cost-effective • is sustainable and builds capacity • is more easily embedded in curriculum delivery • allows for a hands-on component • reduces scheduling challenges • can be differentiated according to learner needs	• lacks sector exposure when no sector representative participates in the certification • may not be perceived as genuine or current by students

AI.4 Experiential Learning and Career Exploration

The SHSM experiential learning and career exploration requirement consists of planned learning activities that take place outside the traditional classroom setting. Experiential learning may take a variety of forms, including:

- career exploration activities
- job shadowing
- job twinning
- work experience
- virtual work experience

POLICY



Although cooperative education is also a form of experiential learning, students must participate in additional experiential learning and career exploration activities in order to meet the SHSM requirements.

Time spent on experiential learning activities cannot be counted towards the hours of community service required for graduation.

How do students benefit?

Experiential learning and career exploration activities give students opportunities to explore, observe, participate in, and reflect on a variety of sector-specific experiences and careers. These activities also enable students enrolled in the SHSM to find out about the opportunities available in careers that interest them.

TOOLS AND RESOURCES



The following resources are available on the ministry website:

- **Cooperative education:** *Cooperative Education and Other Forms of Experiential Learning: Policies and Procedures for Ontario Secondary Schools, 2000* – www.edu.gov.on.ca/eng/document/curricul/secondary/coop/cooped.pdf
- **Workplace safety coverage:** Policy/Program Memorandum No. 76A, September 27, 2000 – www.edu.gov.on.ca/extra/eng/ppm/76a.html
- **Minimum age to work in and visit Ontario workplaces:** SHSM Guide section of the Ministry of Education website – www.ontario.ca/SHSM



SUCCESSFUL PRACTICE

Experiential learning and career exploration activities could include the following:

- participation in a technological skills competition
- one-on-one observation of a cooperative education student in a placement in the sector (example of job twinning)
- a day-long observation of a person working in the sector (example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (example of work experience)
- a career talk by a local sector representative
- attendance at a career fair or a conference hosted by the sector

What placement criteria should be followed?

Experiential learning placements for students must be arranged by the school and must meet the following requirements if the experience exceeds one day:

- A teacher must assess a placement before the student is assigned to it to ensure that the placement offers a positive learning environment and a safe workplace.
- The student must have Workplace Safety and Insurance Board (WSIB) coverage through the ministry or the workplace.

What forms of experiential learning might be considered?

The following table summarizes the forms of experiential learning and related programs you may want to consider:

Forms of Experiential Learning and Career Exploration

Experience	Description	Key Requirements
Career exploration activities	• activities that allow students to explore career opportunities through work-site tours, career conferences or competitions (e.g., Skills Canada), simulation activities (e.g., Junior Achievement), and contact with a career mentor • may be incorporated into any credit course • count towards the experiential learning component required for an SHSM	• preparation for every activity, including learning expectations, activity protocols, and health and safety • opportunity for students to reflect on the activity • completed field-trip form and transportation agreement

Experience	Description	Key Requirements
Job shadowing One-half to one day (in some cases up to three days)	• one-on-one observation of a worker at a place of employment • may be incorporated into any credit course • counts towards the experiential learning component required for an SHSM	• teacher selection of an appropriate placement in a safe work environment • preparation for the placement, including review of learning expectations, activity protocols, and health and safety • opportunity for students to reflect on the experience • completed field-trip form and transportation agreement • WSIB coverage if placement is more than one day
Job twinning One-half to one day	• one-on-one observation of a cooperative education student at his or her placement • may be incorporated into any credit course • counts towards the experiential learning component required for an SHSM	• pairing of a student with a cooperative education student • preparation for the placement, including review of learning expectations, activity protocols, and health and safety • opportunity for students to reflect on the experience • completed field-trip form and transportation agreement
Work experience/virtual work experience One to four weeks	• a planned learning opportunity that provides students with relatively short-term work experience. Virtual work experience is facilitated through the use of communications technology from the school. • may be incorporated into any credit course • counts towards the experiential learning component required for an SHSM	• placement assessment • pre-placement instruction addressing job-readiness skills, placement expectations, and health and safety • opportunity for students to reflect on the experience • development of a learning plan • WSIB coverage

AI.5 Reach Ahead Experiences

Students pursuing an SHSM must have opportunities for reach ahead experiences connected with their postsecondary plans.

What are reach ahead experiences?

These experiences enable Grade 11 and 12 students to gain confidence in their ability to be successful, refine skills and work habits, and make informed choices about future careers and next steps. Reach ahead opportunities could include:

- interviewing an employee in the field of work the SHSM student is considering;
- visiting an approved apprenticeship delivery agent to investigate a program of interest to the SHSM student;
- interviewing a college or university student enrolled in a program of interest to the SHSM student;
- attending a number of college or university classes in the student's area of interest;
- attending a conference or workshop held by the sector;
- completing a dual credit course, which counts for credit towards both the OSSD and a postsecondary certificate, diploma, or degree, or Level 1 apprenticeship. Dual credit courses are ministry funded and subject to separate approval policies and procedures. For more information about dual credit courses, please refer to *Dual Credit Programs – Policy and Program Requirements, 2013*.

AI.6 Development of Essential Skills and Work Habits

SHSM programs help students develop the Essential Skills and work habits that will prepare them for lifelong success, using the Ontario Skills Passport (OSP) as a planning and documentation tool.

What is the OSP?

The OSP is a free, bilingual, Web-based resource that provides clear descriptions of the Essential Skills and work habits important for work, learning, and life.

What are Essential Skills?

Essential Skills are the generic skills used in virtually all occupations and many aspects of daily life. They enable people to perform tasks required in their jobs and to participate fully in the workplace and the community. Essential Skills provide the foundation for learning other skills, such as technical skills and job- or workplace-specific skills, and they help people adjust to change. The OSP also includes important work habits such as working safely, working as part of a team, reliability, and initiative.

The Essential Skills and work habits described in the OSP are illustrated in the table below.

The Ontario Skills Passport: Essential Skills and Work Habits

Essential Skills	Work Habits
Reading Text Writing Document Use Computer Use Oral Communication Numeracy Money Math Scheduling or Budgeting and Accounting Measurement and Calculation Data Analysis Numerical Estimation Thinking Skills Job Task Planning and Organizing Decision Making Problem Solving Finding Information Critical Thinking	Working safely Teamwork Reliability Organization Working independently Initiative Self-advocacy Customer service Entrepreneurship

The OSP provides sample tasks for each Essential Skill and work habit – in work, learning, and everyday life contexts – and illustrates how workers use Essential Skills on the job. The OSP Learner Chart identifies the key OSP tools and resources for helping students build confidence and competence and make connections between their studies at school and their prospective careers. These tools and resources can help students develop their Individual Pathways Plan (IPP) as they answer the four education and career/life planning inquiry questions: *Who am I? What are my opportunities? Who do I want to become? What is my plan for achieving my goals?*

How is the OSP used in an SHSM?

Students use the OSP to learn about Essential Skills and work habits, occupation-related tasks, and careers relevant to the SHSM they have chosen. Teachers provide students with opportunities to use the OSP to assess, practise, and build their Essential Skills and work habits and gather evidence of their skills demonstration during the SHSM experience.

The OSP in cooperative education programs

Students beginning an SHSM cooperative education program will create an OSP Work Plan related to their goals, interests, and particular SHSM sector. The student's work placement supervisor is encouraged to assess and record the Essential Skills and work habits demonstrated by the student, using the OSP documentation tools.

INSIGHT

- Sector representatives consulted on the development of the SHSMs emphasized the importance of the Essential Skills and work habits.
- Employment and Social Development Canada (formerly Human Resources and Skills Development Canada) has identified and validated the Essential Skills described in the OSP. The Ministry of Education and the Ministry of Training, Colleges and Universities co-sponsor the OSP.
- Essential Skills and work habits are transferable from school to work or to further education or training, as well as from job to job and sector to sector.

TOOLS AND RESOURCES



Visit the OSP website at <http://www.skills.edu.gov.on.ca/> to find all the resources described in this section, including:

- Introduction and tips
- Use the OSP to support the development of the IPP
- Use the OSP to support the development of the "All About Me" portfolio
- Assess skills in learning activities
- Assess skills through an interview
- Create an OSP Training Plan
- SkillsZone – sample activities linked to curriculum, etc.
- Resources and links

The OSP in experiential learning and career exploration

The OSP can also be used effectively in conjunction with experiential learning and career exploration activities. For example, students can use the reference sheets, videos, occupational profiles, and self-assessment tools to learn about Essential Skills and work habits and see how they are used in everyday life and on the job in careers relevant to the SHSM. These activities give students opportunities to explore, observe, participate in, and reflect on a variety of sector-specific experiences and careers. They also enable students to increase their awareness of and develop the Essential Skills and work habits required in the sector. An experiential learning assignment or task could require students to identify examples of how the Essential Skills are applied in specific trades and administrative and management occupations – for example, the Essential Skills used by an agricultural equipment mechanic, greenhouse operator, or veterinarian in an agricultural business.

SUCCESSFUL PRACTICE



A skills-based résumé is beneficial for students in preparation for interviews and meetings with employers. Such a résumé would clearly indicate their attainment of Essential Skills and work habits.

Students can use the OSP Tracker and the OSP Reflection Worksheet to plan opportunities for skills development during high school and after graduation. They can find information about education, training, employment, and volunteer opportunities at the provincial and local levels at Ontario WorkInfoNet (www.onwin.ca) and Individual WorkInfoNet (www.iwin.ca).

About Occupations

Although SHSM programs are sector-specific, many different occupations are available within any given sector. Examples of occupations within each specific sector are provided in the SHSM program descriptions in **Section A3: Sectors**, sorted by the type of postsecondary education or training the occupation would normally require, and including National Occupational Classification (NOC) codes. The NOC is a system that describes and classifies all occupations in Canada using four-digit codes.

This system and the codes are the authoritative source for occupational information in Canada. Entering one of these four-digit codes in the “Quick Search” box in the left-hand menu on the National Occupational Classification website (<http://www.esdc.gc.ca/eng/jobs/lmi/noc/index.shtml>) results in occupational information related to that career.

For more information on occupations:

- go to the OSP website at www.ontario.ca/skillspassport;
- go to the “Search for Tasks” section and select “By Occupation”;
- select an occupation that interests you to view a description of the occupation, an overview of the Essential Skills required, a list of sample tasks, and assessment tools and other career and employment information related to the occupation.

Note: This resource uses information based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. More detail about these changes is available on the **NOC website**. Ontario Job Futures uses information based on the 2006 NOC.

A2. DOCUMENTATION REQUIREMENTS

A2.1 Recording Student Progress

A2-3

A2.1 Recording Student Progress

Tracking and documenting are essential to ensure that students' achievement of the SHSM components are recorded in an accurate and timely manner. Students' SHSM achievement is recorded in the following official documents:

Provincial Report Card: The section of the Provincial Report Card titled "Completion of Requirements for Graduation" records and tracks the required bundle of credits and identifies the sector for the SHSM.

Ontario Secondary School Diploma (OSSD): Students who have successfully completed the requirements for an SHSM and an OSSD will be awarded an OSSD with an embossed SHSM seal. Returning graduate students are not eligible to obtain a second diploma. For students earning the SHSM designation after graduation, the OST and SHSM Record will document this successful completion.

Ontario Student Transcript (OST): When a student has successfully completed a credit in the SHSM program, the credit is denoted on the student's OST with an "H" in the "Notes" column. As well, the name of the SHSM (e.g., "Specialist High Skills Major–Manufacturing") will be entered in the box labelled "Specialized Program" in the bottom section of the OST once the student has earned the SHSM.

TOOLS AND RESOURCES



See [Section C: Resources](#) for tools and helpful checklists.

SHSM Record: Students graduating with an SHSM designation on their diploma will also receive an SHSM Record, which provides details regarding their achievement of the five required components – the bundled credits, certifications and training courses/programs, experiential learning and career exploration activities, reach ahead experiences, and use of the OSP to document their demonstration of Essential Skills and work habits. The SHSM Record is given to students upon graduation, and a copy is filed in the student's Ontario Student Record (OSR).

What happens when a student leaves the program, board, or school?

When a student opts out of the SHSM, transfers to another school, or graduates without completing all the components, a copy of the SHSM Record with the notation "partially completed" shows the requirements completed to date. This is filed in the student's OSR and is forwarded to the new school, if applicable. In the event that a student has not achieved all the required components of the SHSM at graduation, the SHSM Record becomes a useful document, as it demonstrates his or her achievement of the SHSM components.

A3. SECTORS

Agriculture	AGR-1
Arts and Culture	A&C-1
Aviation and Aerospace	A&A-1
Business	BUS-1
Construction	CON-1
Energy	ENE-1
Environment	ENV-1
Food Processing	FP-1
Forestry	FOR-1
Health and Wellness	H&W-1
Horticulture and Landscaping	H&L-1
Hospitality and Tourism	H&T-1
Information and Communications Technology	ICT-1
Justice, Community Safety, and Emergency Services	JCSES-1
Manufacturing	MAN-1
Mining	MIN-1
Non-profit	NPR-1
Sports	SPO-1
Transportation	TRA-1

Agriculture

The SHSM–Agriculture enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on agricultural equipment or animal and crop science. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the agriculture sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Agriculture

The SHSM–Agriculture has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four agriculture major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the agriculture sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Business Studies or Science including a CLA <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in agriculture requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Three (3) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three (3) electives from the list below			
animal first aid	basic electrical safety	chainsaw safety	compass /map/global positioning system (GPS)
customer service	equipment operation safety	fundamentals of the combine – level 1	GPS in farming
grain grading	hazardous atmospheres and confined spaces	herbicide and pesticide	hydraulics – basic
infection control	large animal handling	leadership skills	lift truck safety
livestock medicine	livestock production	lockout/tagging	nutrient management
personal protective equipment – agriculture	principles of drainage	safe lifting	sector-specific vehicle operation and safety
seed saving	small engines maintenance	soil testing techniques	theory of combine settings and adjustments – level 2
tractors and other self-propelled equipment	transgenic plant identification	vehicle lift safety	weed and pest identification
Working at Heights			

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the agriculture sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the agriculture sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- the grooming of an animal (e.g., a dog, a cow, or a horse) for a competition
- the care and feeding of farm animals
- a visit to a farmers' market or farm machinery supplier

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Agriculture

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page AGR-6.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Exploring Technologies:** This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including agriculture technology, by engaging in activities related to them.
- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- **Transportation Technology:** This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Agriculture program with a focus on agricultural equipment.
- **Green Industries:** This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Agriculture program with a focus on crop science.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Agriculture by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Agriculture

This template shows program requirements for the SHSM–Agriculture in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Agriculture.

- Shaded boxes represent required credits in the bundle for the SHSM–Agriculture.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 agriculture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 agriculture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 agriculture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 agriculture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Agriculture Sector

The following table provides examples of occupations in the agriculture sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Arborist 2225 • Blacksmith 7266 • Dairy Herdsperson 8253 • Farm Equipment Technician 7312 • Fruit Grower 8251 • Horse Groom 6483 • Parts Person 1472 • Swine Herdsperson 8253	• Agricultural Equipment and Supplies Technical Salesperson 6221 • Customer Support Representative 6221 • Farmer and Farm Manager 8251 • Technical Sales Specialist 6221 • Veterinary Equipment and Supplies Salesperson 6221 • Winery and Viticulture Technician 8251
University	Workplace
• Agricultural Chemist 2112 • Agricultural Inspector 2222 • Agronomist 2123 • Chemical Engineer 2134 • Mechanical Engineer 2132 • Soil Scientist 2115 • Veterinarian 3114	• General Farm Worker 8431 • Greenhouse Worker 8432 • Harvesting Labourer 8611 • Mechanic Helper 7612 • Pet Groomer and Animal Care Worker 6483 • Specialized Livestock Worker 8253

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Agriculture Sector

The following are examples of programs and training related to careers in the agriculture sector and the accreditations associated with each.

Apprenticeship Training

Agricultural Dairy Herdsperson	Certificate of apprenticeship/ certificate of qualification
Agricultural Equipment Technician	Certificate of apprenticeship/ certificate of qualification
Agricultural Fruit Grower	Certificate of apprenticeship/ certificate of qualification
Agricultural Swine Herdsperson	Certificate of apprenticeship/ certificate of qualification
Arborist	Certificate of apprenticeship/ certificate of qualification
Blacksmith	Certificate of apprenticeship/ certificate of qualification
Heavy Equipment Operator	Certificate of apprenticeship/ certificate of qualification
Horse Groom	Certificate of apprenticeship/ certificate of qualification
Horse Harness Maker	Certificate of apprenticeship/ certificate of qualification
Hydraulics/Pneumatics Mechanic	Certificate of apprenticeship/ certificate of qualification
Motive Power Techniques	Certificate of apprenticeship/ certificate of qualification
Saddlery	Certificate of apprenticeship/ certificate of qualification

College

Agriculture	Diploma
Agriculture – Equine	Diploma
Animal Care	Diploma
Greenhouse Technician	Diploma
Veterinary Assistant	Diploma
Veterinary Technology	Diploma
Winery and Viticulture	Diploma

University

Agricultural Business/Economics	Bachelor's degree
Agricultural Science/Organic Agriculture	Bachelor's degree
Agronomy	Bachelor's degree
Animal Science/Zoology	Bachelor's degree
Bio-Resource Management	Bachelor's degree
Environmental Economics and Policy	Bachelor's degree
Plant Biology	Bachelor's degree
Veterinary Medicine	Bachelor's degree

Training for the Workplace

Business Management	Certificate
Coaching and Horsemanship	Certificate
Equine Management	Certificate
Welding Techniques	Certificate

Arts and Culture

The SHSM–Arts and Culture enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on dance, dramatic arts management or technical production. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the arts and culture sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Arts and Culture

The SHSM–Arts and Culture has the following five required components:

1. A bundle of eight Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four arts and culture major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **two other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the arts and culture sector. The two credits include:
 - one in English¹ and
 - one in business studies or Canadian and world studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Business Studies or Canadian and World Studies <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	8	8	8	8

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education*, 2009, page 17).

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in arts and culture requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Three (3) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three (3) electives from the list below			
advanced training in a technique (e.g., figure drawing, conducting, sewing)	advanced training in a technology (e.g., 3D printing, laser cutting, Serato)	advanced training in an art form (e.g., mime, tapdance, improvisation)	advanced training in art therapy
audition preparation	basic electrical safety	Beauty Specialist Certification Program – three-part course	curatorial techniques
customer service	elevated work platforms	event coordination	framing and matting
game design	health and safety – basic	instructor certification	interactive art forms
leadership skills	lighting and sound equipment maintenance	makeup/cosmetology	musical instrument repair
portfolio development	proper lifting and carrying techniques	proposal/grant writing	pyrotechnics
recording equipment	software 1 (e.g., animation, graphic arts)	software 2 (e.g., photography)	stage combat
technical staging	Working at Heights	wrapping and taping for performance and injury	

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the arts and culture sector (an example of job twinning)
- a day-long observation of an artist (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- participation in a local, provincial, or national competition focused on one of the arts
- attendance at a sector trade show, conference, symposium, or job fair
- a tour of a local theatre, museum, studio, or art gallery

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.



POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.



4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Arts and Culture

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page A&C-7.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- A Grade 9 arts course or Exploring Technologies: These courses are recommended because they allow students to develop skills and acquire knowledge in a particular area of arts and culture and to benefit from doing so at an early age.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- A Grade 10 course in the arts or technological education: These courses are recommended for students considering enrolling in an SHSM–Arts and Culture program. These courses provide students with opportunities to further explore the area of focus being considered and develop their skills, and to gain a better understanding of the program.
- Schools and boards can also provide opportunities for students to explore occupations in the sector through experiential learning. These experiences could include job shadowing, visiting art galleries, and participating in the Ontario Arts Council’s Artist in Education workshops.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary Diploma (OSSD) with an SHSM–Arts and Culture by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Some students may need to earn some of the required credits for the SHSM in arts and culture in the summer or evening, or through e-learning. Co-op placements that focus on cultural activities are often scheduled at those times.

Students in Grade 12 may want to earn the arts and culture major credits required in that grade in the first half of the school year so that they are better prepared for college and university portfolio interviews and performance auditions, which are usually held in January and February. For the same reason, students may also want to complete as many sector-recognized certifications and training courses/programs as they can in the first half of the year. Wherever possible, students should include documentation such as a certificate or proof of completion of these certifications and training courses/programs in their admissions portfolio or résumé. Along with this documentation, students should include proof of their attainment of Essential Skills and work habits identified in the OSP, as recorded in their OSP Work Plans by employers during cooperative education placements.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM—Arts and Culture

This template shows program requirements for the SHSM—Arts and Culture in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM—Arts and Culture.

- Shaded boxes represent required credits in the bundle for the SHSM—Arts and Culture.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 arts and culture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 arts and culture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 arts and culture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 arts and culture major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Arts and Culture Sector

The following table provides examples of occupations in the arts and culture sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See **Section A1.6** for more on occupations and NOC codes.

Apprenticeship Training	College
- Entertainment Industry Power Technician 5225 - Gem Setter/Goldsmith 5243 - Native Clothing and Crafts Artisan 5244 - Painter and Decorator 7294	- Actor or Comedian 5135 - Animator – Graphic Design and Illustration 5241 - Announcer and Other Broadcasters 5231 - Apparel Production Supervisor 9225 - Artisan or Craftsperson 5244 - Broadcast Technician 5224 - Film or Video Camera Operator 5222 - Graphic Arts Technician 5223 - Graphic Designer or Illustrator 5241 - Interior Designer 5242 - Other Performers 5232 - Other Technical and Coordinating Occupations in Motion Pictures, Broadcasting, and the Performing Arts 5226 - Photographer 5221 - Technical Occupations Related to Museums and Art Galleries 5212 - Theatre, Fashion, Exhibit, and Other Creative Designers 5243 - Video Recording Technician 5225
University	Workplace
- Author or Writer 5121 - Conductor, Composer, or Arranger 5132 - Conservator or Curator 5112 - Dancer 5134 - Painters, Sculptors, and Other Visual Artists 5136 - Producer, Director, Choreographer, and Related Occupations 5131 - Professional Occupations in Public Relations and Communications 5124	- Camera, Platemaking, or Other Pre-Press Operations 9472 - Desktop Publishing Operator and Related Occupations 1423 - Entertainer 5232 - Graphic Artist or Illustrator 5241 - Musician or Singer 5133 - Photographic and Film Processor 9474 - Sign Maker 9498 - Textile Colourist 9443 - Weaver, Knitter, and Other Fabric-Making Occupations 9442

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the **NOC website**. Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Arts and Culture Sector

The following are examples of programs and training related to careers in the arts and culture sector and the accreditations associated with each.

Apprenticeship Training

Entertainment Industry Power Technician	Certificate of apprenticeship/ certificate of qualification
Gem Setter/Goldsmith	Certificate of apprenticeship/ certificate of qualification
Native Clothing and Crafts Artisan	Certificate of apprenticeship/ certificate of qualification
Painter and Decorator	Certificate of apprenticeship/ certificate of qualification

College

Dance

Dance History	Diploma
Performance Studies	Diploma

Theatre/Drama/Performing Arts

Acting for Film, Television, and Theatre	Diploma
Audio Production, Recording, and Engineering Technology	Diploma
Comedy Writing and Performance	Diploma
Entertainment Business	Diploma
Musical Theatre	Diploma
Performing Arts Administration	Diploma
Theatre – Dramatic Arts/Performance	Diploma
Theatre Production and Technical Production	Diploma

Music

Applied Music	Diploma
Audio Engineering, Recording, Production	Diploma
Entertainment/Music Business Management	Diploma
Music	Diploma
Music Performance	Diploma
Sound Design	Diploma

Visual/Media Arts and Design

Advertising Design and Media Sales	Diploma
Computer/Digital Animation	Diploma
Digital Video Production	Diploma
Fashion Arts/Fashion Design	Diploma
Fashion Marketing and Merchandising	Diploma
Fashion/Video Makeup Design	Diploma
Film and Television Technician	Diploma
Game Development/Multimedia Development	Diploma
Graphic Design – Advertising and Package Design	Diploma
Interior Design/Decorating	Diploma
Internet Graphic Design	Diploma
Radio Broadcasting	Diploma
Residential Design	Diploma
Television Broadcasting	Diploma
Visual Merchandising Arts	Diploma
Visual, Creative, Design, Digital, and Media Arts	Diploma

*University**Dance*

Dance Studies	Bachelor's degree
Theatre Performance – Dance	Bachelor's degree

Theatre/Drama/Performing Arts

Drama	Bachelor's degree
Drama and Speech Communication	Bachelor's degree
Drama in Education and Community	Bachelor's degree
Drama/Theatre Arts/Theatre Studies – Performance	Bachelor's degree
Theatre/Drama	Bachelor's degree

Music

Music	Bachelor's degree
Music – Administrative Studies	Bachelor's degree
Music Education	Bachelor's degree
Music History, Culture, Theory, and Composition	Bachelor's degree
Music Performance	Bachelor's degree
Music Therapy	Bachelor's degree

Visual/Media Arts and Design

Animation	Bachelor's degree
Applied Arts – Interior Design	Bachelor's degree
Architectural Studies	Bachelor's degree
Art History	Bachelor's degree
Communication Studies	Bachelor's degree
Creative Advertising	Bachelor's degree
Fashion Communication	Bachelor's degree
Fashion Design	Bachelor's degree
Film Studies	Bachelor's degree
Graphic Design	Bachelor's degree
Illustration	Bachelor's degree
Image Arts	Bachelor's degree
Journalism	Bachelor's degree
Visual Arts	Bachelor's degree
Visual Arts – Computer Science	Bachelor's degree
Visual Culture	Bachelor's degree

*Training for the Workplace**Dance*

Commercial Dance Studies	Certificate
Dance Performance Preparation	Certificate
Dance Studies	Certificate
Expressive Arts	Certificate

Theatre/Drama/Performing Arts

Introduction to Performing Arts Careers	Certificate
Performing Arts Preparation	Certificate

Music

Applied Music – Preparatory	Certificate
Digital Music Design	Certificate
Music Media Fundamentals	Certificate

Visual/Media Arts and Design

Advertising Design	Certificate
Animation and Rendering	Certificate
Architectural Modelling	Certificate
Art and Design Foundation	Certificate
Computer/Digital Animation	Certificate
Computer/Graphic Design/Image Arts	Certificate
Desktop Publishing	Certificate
Fundamentals of Interior Design	Certificate
Visual Arts Literacy and Fundamentals	Certificate

Aviation and Aerospace

The ever-changing nature of aviation and aerospace, the complexity of supply chain dynamics, and the accelerated pace of change in the aerospace sector provide a variety of career opportunities for Ontario students.

Core industries in this sector include:

- maintenance, repair, and overhaul services for aircraft, engines, avionics, systems, and equipment
- design and manufacturing of commercial aircraft, engines, systems, avionics, equipment, and components
- flight operations (e.g., pilot training, airport services, air traffic control, and space and equipment handling)

TOOLS AND RESOURCES



For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the aviation and aerospace sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Aviation and Aerospace

The SHSM–Aviation and Aerospace has the following five required components:

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four aviation and aerospace major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the aviation and aerospace sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in business studies or Canadian and world studies or science (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Canadian and World Studies or Business Studies or Science including a CLA <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in aviation and aerospace requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining four are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Three (3) compulsory				
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid		Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Four (4) electives from the list below				
basic electrical safety	compass/map/global positioning system (GPS)	computer-aided design and computer-aided manufacturing (CAD/CAM)	confined space awareness	customer service
elevated work platforms	environmental compliance	environmental spill	ergonomics	fire extinguisher use
health and safety – basic	leadership skills	lockout/tagging	propane safety	sector-specific vehicle operation and safety
transit security	Working at Heights			

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the aviation and aerospace sector (an example of job twinning)
- a day-long observation of an aviation and aerospace sector worker (e.g., turbine engine technician) (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the aviation and aerospace sector (e.g., aircraft maintenance engineer) (an example of work experience)
- attendance at an aviation and aerospace sector trade show, a conference, a symposium, or a job fair
- participation in a local, provincial, or national contest or competition with a focus on aviation and aerospace
- a tour of a local aviation museum, air force base, airport, or manufacturing facility

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!



See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!



See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Aviation and Aerospace

A table illustrating the four pathways and required credits leading to completion of the SHSM–Aviation and Aerospace is provided on page A&A-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES



Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including aviation and aerospace technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

- **Transportation Technology:** This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Aviation and Aerospace program. The course provides students with opportunities to explore the sector, identify personal interests and aptitudes, and investigate the program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Aviation and Aerospace by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship training pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM—Aviation and Aerospace

This template shows program requirements for the SHSM—Aviation and Aerospace in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM—Aviation and Aerospace.

- Shaded boxes represent required credits in the bundle for the SHSM—Aviation and Aerospace.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 aviation and aerospace major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 aviation and aerospace major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 aviation and aerospace major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 aviation and aerospace major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Aviation and Aerospace Sector

The following table provides examples of occupations in the aviation and aerospace sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require. Many of the careers listed below can be obtained by following several different pathways. For example, “Air Pilot” appears under the college pathway but may also be achieved by following the university or workplace pathway.

FIND IT!

See **Section A1.6** for more on occupations and NOC codes.



Apprenticeship Training	College
• Aircraft Instrument, Electrical, and Avionics Mechanic, Technician, and Inspector 2244 • Aircraft Sheet Metal Technician 7261 • Aircraft Mechanic and Aircraft Inspector 7315 • Aircraft Welder 7265 • Aviation Machinist 7231	• Aircraft Instruments, Electrical and Avionics Mechanics, Technicians and Inspectors 2244 • Air Pilot, Flight Engineer, and Flying Instructor 2271 • Air Traffic Controller and Related Occupations 2272 • Electronic Service Technician 2242 • Mechanical Engineering Technologist and Technician 2232 • Metal Fabricator Fitter 7263 • Meteorological Technician 2213 • Non-destructive Tester and Inspector 2261 • Quality Control Technician 2233
University	Workplace
• Aerospace Engineer 2146 • Avionics Engineer 2133 • Industrial and Manufacturing Engineer 2141 • Mechanical Engineer 2132	• Air Traffic Controller 2272 • Air Transport Ramp Attendant 7437 • Aircraft Assembler and Aircraft Assembly Inspector 9481 • Airline Sales and Service Agent 6433 • Material Handler 7452 • Transportation and Crew Scheduler 1476

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Aviation and Aerospace Sector

The following are examples of programs and training related to careers in the aviation and aerospace sector and the accreditations associated with each.

INSIGHT

Transport Canada is the primary governing body for aviation maintenance engineer (AME) licensing in Canada.

Apprenticeship Training

Aircraft Instrument, Electrical and Avionics Mechanic	Certificate of apprenticeship/ certificate of qualification
Aviation Machinist	Certificate of apprenticeship/ certificate of qualification

College

Aircraft Gas Turbine Engine Repair and Overhaul Technician	Diploma
Aircraft Maintenance Technician	Diploma
Aircraft Structures Technician	Diploma
Aviation – General Arts and Science	Diploma
Aviation Management	Diploma
Flight Simulator Technician	Diploma

University

Aerospace Engineer	Bachelor's degree
Electrical Engineer	Bachelor's degree
Industrial and Manufacturing Engineer	Bachelor's degree
Mechanical Engineer	Bachelor's degree
Technical Manager	Bachelor's degree

Training for the Workplace

Air Traffic Controller	Licence
Aircraft Assembler	Certificate
Aircraft De-icer	Certificate
Aircraft Interior Technician	Certificate
Airline Sales and Service Agent	Certificate
Airport Maintenance	Certificate
Airport Security	Certificate

Aircraft Structures Technician Composites	Certificate
Aviation Painter	Certificate
Flight Attendant	Certificate
Flight Dispatcher	Licence
Flight Service Specialist	Licence
Pilot	Certificate
Ramp Attendant	Certificate

Business

The SHSM–Business enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on entrepreneurship, finance, accounting, retail, marketing, international business, economics, management and administration, or event planning. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the business sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Business

The SHSM–Business has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four business major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the business sector.
For the apprenticeship training, college, and university pathways, the three credits include:
 - one in English¹ and
 - two in mathematics (one credit must be in Grade 12 and both credits must include a CLA)*For the workplace pathway, the three credits include:*
 - two in English (one credit must be in Grade 12 and both credits must include a CLA)¹ and
 - one in mathematics
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA in each credit</i>	1	1	1	2 <i>One credit must be in Gr. 12</i>
Mathematics <i>including a CLA in each credit</i>	2 <i>One credit must be in Gr. 12</i>	2 <i>One credit must be in Gr. 12</i>	2 <i>One credit must be in Gr. 12</i>	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in business requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining two are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	customer service	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Two (2) electives from the list below			
business etiquette	cash handling and register training	counterfeit detection	
effective networking	equity and inclusion	ergonomics	
ethical considerations	fraud prevention	health and safety – basic	
leadership skills	negotiation training	personality inventory	
public speaking	retail representative	software	
specialized business program/competition (e.g., regional or provincial level DECA, Junior Achievement Company Program, Stock Market Competition, Make Your Pitch, Summer Company Program)	successful exhibiting		

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the business sector (an example of job twinning)
- a day-long observation of a business person (an example of job shadowing)

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

- a one- or two-week work experience with a member of a business association or a professional in the sector (an example of work experience)
- attendance at a retail show (e.g., a home show or craft show), conference, or workshop focusing on the business sector
- participation in a local, provincial, or national contest or competition with a focus on business (e.g., a business plan competition or stock market competition)
- working with a mentor within the business community (e.g., to provide assistance in creating a business plan)
- a tour of the local chamber of commerce

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector.

FIND IT!

See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Business

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page BUS-6.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Introduction to Business:** This Grade 9 course is recommended for all students following SHSM pathways that have a business focus. The course provides students with opportunities to explore a variety of business topics by engaging in activities related to them.
- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- **Information and Communication Technology in Business:** This course is recommended for any Grade 10 student who is considering enrolling in an SHSM – Business program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary Diploma (OSSD) with an SHSM–Business by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Program Pathways: SHSM–Business

This template shows program requirements for the SHSM–Business in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Business.

- Shaded boxes represent required credits in the bundle for the SHSM–Business.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of three. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	2 English credits (C)* (One must be in Grade 12.)
2 math credits (C)* (One credit must be in Gr. 12.)	2 math credits (C)* (One credit must be in Gr. 12.)	2 math credits (C)* (One credit must be in Gr. 12.)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
4 business major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 business major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 business major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 business major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.) (For the apprenticeship training, college, and university pathways, both math credits must include a CLA. For the workplace pathway, both English credits must include a CLA.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Business Sector

The following table provides examples of occupations in the business sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See **Section A1.6** for more on occupations and NOC codes.

Apprenticeship Training	College
• Hardware, Lumber, and Building Materials Retailer 6421 • Parts Technician 1472 • Special Events Coordinator 1226	• Accounting and Related Clerk 1431 • Administrative Clerk 1441 • Administrative Officer 1221 • Assessor, Valuator, and Appraiser 1235 • Banking, Insurance, and Other Financial Clerk 1434 • Bookkeeper 1231 • Conference and Event Planner 1226 • Court Officer and Justice of the Peace 1227 • Desktop Publishing Operator and Related Occupations 1423 • Insurance Adjuster and Claims Examiner 1233 • Legal Secretary 1242 • Loan Officer 1232 • Personnel and Recruitment Officer 1223 • Personnel Clerk 1442 • Professional in Business Services 1122 • Purchasing Agent and Officer 1225 • Retail and Wholesale Buyer 6233 • Secretary (except Legal and Medical) 1241 • Social Policy Researcher, Consultant, and Program Officer 4164 • Specialist in Human Resources 1121 • Supervisor – Recording, Distributing, and Scheduling 1215 • Supervisor, Finance and Insurance Clerks 1212

University	Workplace
• Business Development Officer and Marketing Researcher and Consultant 4163 • Economist and Economic Policy Researcher and Analyst 4162 • Executive Assistant 1222 • Financial and Investment Analyst 1112 • Financial Auditor and Accountant 1111 • Mathematician, Statistician, and Actuary 2161 • Professional in Business Services 1122 • Securities Agent, Investment Dealer, and Broker 1113 • Social Policy Researcher, Consultant, and Program Officer 4164 • Specialist in Human Resources 1121	• Accounting and Related Clerk 1431 • Administrative Clerk 1441 • Banking, Insurance, and Other Financial Clerk 1434 • Customer Service and Related Clerks 1453 • Customer Service Representative – Financial Services 1433 • Customs, Ship, and Other Broker 1236 • General Office Clerk 1411 • Payroll Clerk 1432 • Personnel Clerk 1442 • Postal or Mail Clerk 1461 • Purchasing and Inventory Clerk 1474 • Real Estate Agent and Salesperson 6232 • Receptionist, Admitting Clerk 1414 • Records Management and Filing Clerk 1413 • Retail and Wholesale Buyer 6233 • Retail Salesperson and Sales Clerk 6421 • Shippers and Receivers 1471 • Storekeeper and Parts Clerk 1472

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Business Sector

The following are examples of programs and training related to careers in the business sector and the accreditations associated with each.

Apprenticeship Training

Construction Materials Retailer	Certificate of apprenticeship/ certificate of qualification
Hardware, Lumber, and Building Materials Retailer	Certificate of apprenticeship/ certificate of qualification
Special Events Coordinator	Certificate of apprenticeship/ certificate of qualification

College

Accounting and Finance	Diploma/advanced diploma/ bachelor's degree
------------------------	--

Accounting Business Systems	Diploma
Administrative Assistant	Diploma
Advertising – Integrated Marketing Communications, Media Sales, Media Marketing and Sales, Creative Media, Graphic Design	Diploma
Advertising and Graphic Design	Diploma
Applied Business	Bachelor's degree
Business–Insurance, Accounting, Marketing, Information Systems, Logistics	Diploma
Business Administration	Diploma/advanced diploma/ bachelor's degree
Business Computer Systems	Diploma
Business Operations	Diploma
Business Skills and Marketing	Diploma
Community Economic and Social Development Administration	Diploma
Corporate Communications/Public Relations	Advanced diploma/ bachelor's degree
E-Business Administration	Diploma
E-Business Supply Chain Management	Bachelor's degree
E-Commerce Management	Diploma
Economics	Bachelor's degree
Event Management	Diploma
Fashion Business	Diploma
Financial Planning, Financial Services	Diploma/bachelor's degree
General Business	Diploma/advanced diploma
Human Relations Management	Diploma
Human Resources Management	Advanced Diploma
International Accounting and Finance	Bachelor's degree
International Business	Diploma/bachelor's degree
Marketing Administration	Diploma/advanced diploma/ graduate certificate
Materials and Operations Management	Advanced diploma
Professional Accounting	Diploma
Professional Financial Service, Medical Intensive	Diploma
Public Institution Management and Administration	Diploma

Public Relations	Diploma
Small Business and Entrepreneurship	Diploma
Small Business Management	Diploma
Sports Business Management	Diploma

University

Accounting	Bachelor's degree
Accounting and Financial Management	Bachelor's degree
Administrative Studies/Commercial Studies	Bachelor's degree
Advertising Design	Bachelor's degree
Business Administration	Bachelor's degree
Business and Computer Science	Bachelor's degree
Business and Mathematics	Bachelor's degree
Business Communications	Bachelor's degree
Commerce	Bachelor's degree
Commerce and Computer Science	Bachelor's degree
Commerce and Finance	Bachelor's degree
E-Business	Bachelor's degree
E-Commerce	Bachelor's degree
Economics	Bachelor's degree
Economics and Business	Bachelor's degree
Economics and Finance	Bachelor's degree
Entrepreneurial Management	Bachelor's degree
Entrepreneurship	Bachelor's degree
Environment and Business	Bachelor's degree
Finance	Bachelor's degree
Financial Mathematics	Bachelor's degree
Housing and Real Estate Management	Bachelor's degree
Human Resources Management/Industrial Relations	Bachelor's degree
International Business/International Economics	Bachelor's degree
International Investment Finance and Banking	Bachelor's degree
International Management	Bachelor's degree
International Trade	Bachelor's degree
Management Economics/Industry and Finance	Bachelor's degree
Marketing	Bachelor's degree

Mathematics and Business Administration	Bachelor's degree
Mathematics for Commerce	Bachelor's degree
Operational Research/Operations Management	Bachelor's degree
Organizational Studies/Leadership	Bachelor's degree
Retail Management	Bachelor's degree
Sports Administration/Sports Management	Bachelor's degree
Strategic Management in International Human Resources	Bachelor's degree
Sustainable Local Economic Development	Bachelor's degree

Training for the Workplace

Accounting and Information Technology	Certificate
Advanced Web Development for E-Business	Certificate
Advertising Design	Certificate
Business Foundations	Certificate
Business Management	Certificate
Business Office Skills	Certificate
Communications Excellence	Certificate
Customer Service Fundamentals – Insurance	Certificate
Customer Service Leadership	Certificate
Desktop Publishing	Certificate
E-Commerce	Certificate
Finance and Insurance Clerk	Certificate
Human Resources Associate	Certificate
Human Resources Management	Certificate
Management	Certificate
Office Administration – Executive, General, Legal, Medical	Certificate
Office Administration – General	Certificate
Retail Sales Associate	Certificate
Retail Sales Excellence	Certificate
Small Business – Office Automation	Certificate
Web-Design Development and Maintenance	Certificate
Workplace Leadership	Certificate

Construction

The SHSM–Construction enables students to build a foundation of sector-focused knowledge and skills before entering apprenticeship training, college, university, or an entry-level position in the workplace.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the construction sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Construction

The SHSM–Construction has the following five required components:

1. A bundle of 10 Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four construction major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **four other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the construction sector.

FIND IT!

See **Section A1.2** for more on SHSM credits.

For the apprenticeship training, college, and university pathways, the four credits include:

- one in English;¹
- two in mathematics (one credit must be in Grade 12 and both credits must include a CLA); and
- one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);

For the workplace pathway, the four credits include:

- two in English (one credit must be in Grade 12 and both credits must include a CLA);¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA in each credit</i>	1	1	1	2 <i>One credit must be in Gr. 12</i>
Mathematics <i>including a CLA in each credit</i>	2 <i>One credit must be in Gr. 12</i>	2 <i>One credit must be in Gr. 12</i>	2 <i>One credit must be in Gr. 12</i>	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	10	10	10	10

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in construction requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, five are compulsory and the remaining two are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Five (5) compulsory				
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	health and safety – basic	Standard First Aid	Working at Heights	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Two (2) electives from the list below				
basic electrical safety	Canadian Welding Bureau (CWB) – flat	chainsaw safety	confined space awareness	
customer service	elevated work platforms	energy efficiency training (e.g., Energy Star, LEED)	fire extinguisher use	
hoisting and rigging	insulated concrete forming	land surveying basics	leadership skills	
lockout/tagging	personal protective equipment – construction	powder-actuated tools	propane in construction	
scaffold safety	sector-specific vehicle operation and safety	specialized skills training program/competition (e.g., Skills Canada provincial level, WoodLINKS)	suspended access equipment	
traffic control	trenching safety			

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the construction sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the construction sector (an example of job shadowing)
- a one- or two-week work experience with an individual employed in the construction sector (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- a tour of a municipal planning department
- attendance at a construction sector trade show, conference, or job fair
- a volunteer experience with a non-profit organization such as Habitat for Humanity

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Construction

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page CON-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including construction technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Construction Technology: This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Construction program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Construction by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Construction

This template shows program requirements for the SHSM–Construction in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Construction.

- Shaded boxes represent required credits in the bundle for the SHSM–Construction.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	2 English credits (C)* (One credit must be in Gr. 12.)
2 math credits (C)* (One credit must be in Gr. 12.)	2 math credits (C)* (One credit must be in Gr. 12.)	2 math credits (C)* (One credit must be in Gr. 12.)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 construction major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 construction major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 construction major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 construction major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade. (For the apprenticeship training, college, and university pathways, both math credits must include a CLA. For the workplace pathway, both English credits must include a CLA.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Construction Sector

The following table provides examples of occupations in the construction sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Brick and Stone Mason 7281 • Carpenter 7271 • Construction Millwright 7311 • Electrician 7241 • Heating and Air Conditioning Contractor 7313 • Painter and Decorator 7294 • Plumber 7251 • Roofer 7291	• Architectural Design Technician/Technologist 2251 • Civil Engineering Technologist 2231 • Construction Estimator 2234 • Construction Manager 0711 • Construction Technologist 2231 • Contractor and Supervisor – Electrical Trades and Telecommunications 7212 • Home Inspector 2264 • Interior Designer 5242 • Residential Home Builder or Renovator 0712
University	Workplace
• Architect 2151 • Electrical Engineer 2133 • Mechanical Engineer 2132 • Structural Engineer 2131	• Carpenter Helper 7611 • Concrete Finisher 7282 • Construction Trades Helper and Labourer 7611 • Demolition Worker 7611 • Drywall Installer 7611 • Helper – Construction Trades 7611 • Home Renovator 0712

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Construction Sector

The following are examples of programs and training related to careers in the construction sector and the accreditations associated with each.

Apprenticeship Training

Brick and Stone Mason	Certificate of apprenticeship/ certificate of qualification
Concrete Finisher	Certificate of apprenticeship/ certificate of qualification
Construction and Maintenance Electrician	Certificate of apprenticeship/ certificate of qualification
Construction Craft Worker	Certificate of apprenticeship/ certificate of qualification
Construction Millwright	Certificate of apprenticeship/ certificate of qualification
Drywall, Acoustic, and Lathing Applicator	Certificate of apprenticeship/ certificate of qualification
General Carpenter	Certificate of apprenticeship/ certificate of qualification
Plumber	Certificate of apprenticeship/ certificate of qualification
Refrigeration and Air Conditioning Systems Mechanic	Certificate of apprenticeship/ certificate of qualification
Sheet Metal Worker	Certificate of apprenticeship/ certificate of qualification

College

Air Conditioning and Refrigeration Engineering Technician	Diploma
Applied Technology – Construction and Environment: Regulations and Compliance	Bachelor's degree
Applied Technology – Construction Science and Management	Bachelor's degree
Architectural Technician	Diploma
Architectural Technology	Advanced diploma
Building Inspection Technician	Diploma
Construction Engineering Technology	Advanced diploma
Electrical Engineering Technician – Industrial	Diploma

Electrical Power Generation	Diploma
Electrical Techniques	Diploma
Fire Protection Engineering Technician	Diploma

University

Civil Engineering	Bachelor's degree, honours
Electrical Engineering	Bachelor's degree, honours
Industrial Engineering	Bachelor's degree, honours
Mechanical Engineering	Bachelor's degree, honours

Training for the Workplace

Construction Techniques	Certificate
Gas Metal Arc Welding	Certificate
Mechanical Techniques – Construction	Certificate
Mechanical Techniques – CNC/CAD/CAM Specialist	Certificate
Mechanical Techniques – Design	Certificate
Welding Techniques	Certificate

Energy

Students enrolled in the SHSM–Energy will be involved in today’s rapid and exciting changes in green energy technologies. They will have the opportunity to solve some of the most pressing issues facing modern societies, while having good prospects for a varied career in a dynamic sector. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on power generation and distribution, renewable and alternative energy, or energy efficiency. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in this sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the energy sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Energy

The SHSM–Energy has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four energy major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the energy sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies or Canadian and world studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Business Studies or Canadian and World Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in energy requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Three compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three electives from the list below			
alternative energy	basic electrical safety	compass/map/global positioning system (GPS)	computer-aided design and computer-aided manufacturing (CAD/CAM)
confined space awareness	customer service	elevated work platforms	energy efficiency
ergonomics	fire extinguisher use	geographic information system (GIS)	hazardous materials
health and safety – basic	hoisting and rigging	leadership skills	lockout/tagging
personal protective equipment – energy	pipeline construction safety	radiation safety	renewable energy
sector-specific vehicle operation and safety	trenching safety	watershed management	Working at Heights

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector could include the following:

- one-on-one observation of a cooperative education student at a placement in the energy sector (an example of job twinning)
- a day-long observation of an energy sector worker (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the energy sector (an example of work experience)
- attendance at an energy sector trade show, a conference, a symposium, or a job fair
- a tour of an energy-efficient building to explore passive-solar design and green building materials
- participation in a local, provincial, or national contest or competition with a focus on energy
- a tour of a wind farm or generating station
- volunteering with a non-profit organization focused on energy conservation

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.



POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Energy

A table illustrating the four pathways and required credits leading to completion of the SHSM–Energy is provided at the end of this section on page ENE-8.

Awareness building (Grades 7 and 8)

See **Section B3.4** for more information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options related to the energy sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including energy sector technology, by engaging in activities related to them.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.

- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- A Grade 10 course in technological education or business studies: These courses are recommended for any Grade 10 student who is considering enrolling in an SHSM–Energy program. They provide students with opportunities to explore areas of study relevant to the energy sector, identify personal interests and aptitudes, and gain a better understanding of the program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Energy by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

The four major credits for an SHSM–Energy will vary according to the area of focus:

- *Power generation and distribution* focuses on energy production on a large scale and may include occupations such as electrical or mechanical engineer, electrician, powerline technician, or process operator. Also included in this area of focus are occupations associated with the construction of generating stations and distribution systems. Major credits for this area of focus might include construction technology, manufacturing technology, technological design, or physics. A construction technology course may concentrate on electricity specifically.
- *Renewable and alternative energy* focuses on new and emerging green energy technologies, such as wind, solar, biomass, geothermal, or hydrogen fuel cell technology. Occupations in this area of focus include electromechanical engineer, research and development lab technician, wind turbine technician, or solar panel installer. Major credits for this area of focus might include green industries, resource management, or environmental science.
- *Energy efficiency* focuses on reducing energy use by residential, commercial, industrial, and institutional consumers. Occupations in this area include environmental engineer, energy auditor, building renovation tradesperson, or energy systems technologist. Major credits for this area might include construction technology, environmental science, resource management, or entrepreneurship. With the advent of energy-saving building technologies such as green roofs, Green Industries may also be applicable as a major credit for this area of focus.

Students have the option of choosing a science course or a geography course depending on their SHSM focus and postsecondary plans, as shown in the following examples:

- Students focusing on power generation and distribution who have an interest in nuclear energy might take a chemistry course, whereas students interested in fossil fuel power generation might take an earth science course.
- Students focusing on renewable and alternative energy who plan to pursue a career as a research scientist or as a laboratory technician might take a course in environmental science.

- Students focusing on energy efficiency who are interested in natural resource management might take a physical geography course.
- Students planning to enter the workplace directly after graduation might take a geography course in resource management.

Students pursuing an apprenticeship training pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Energy

This template shows program requirements for the SHSM–Energy in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Energy.

- Shaded boxes represent required credits in the bundle for the SHSM–Energy.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* or Canadian and world studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 energy major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 energy major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 energy major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 energy major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Energy Sector

The following table provides examples of occupations in the energy sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require. Many of the careers listed below can be obtained by following several different pathways. For example, “Technical Sales Specialist” appears under the college pathway but may also be achieved by following the university or workplace pathway.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.



Apprenticeship Training	College
• Arborist 2225 • Construction Millwright and Industrial Mechanic 7311 • Contractor and Supervisor, Electrical Trades and Telecommunications Occupations 7212 • Contractor and Supervisor, Mechanical Trades 7216 • Electrical Mechanic 7333 • Electrical Power Line and Cable Worker 7244 • Gas Fitter 7253 • Glazier 7292 • Industrial Instrument Technician and Mechanic 2243 • Industrial Electrician 7242 • Insulator (heat and frost) 7293 • Machinist, Machining, and Tooling Inspector 7231 • Petroleum, Gas, and Chemical Process Operator 9232 • Power System Electrician 7243 • Power Systems and Power Station Operator 7352 • Refrigeration and Air Conditioning Mechanic 7313 • Stationary Engineer and Auxiliary Equipment Operator 7351 • Steamfitter, Pipefitter, and Sprinkler System Installer 7252b	• Biological Technologist and Technician 2221 • Civil Engineering Technologist and Technician 2231 • Construction Electrician 7241 • Energuide and Quality Control Manager 2264 • Geological and Mineral Technologist and Technician 2212 • Geothermal Installer 7251 • Geothermal System Designer 7213 • Industrial Engineering Technician 2233 • Land Surveyor 2154 • Mapping and Related Technologist and Technician 2255 • Mechanical Engineer and Technologist 2232 • Natural and Applied Science Policy Researcher, Consultant, and Program Officer 4161 • Petroleum, Gas, and Chemical Process Operator 9232 • Supervisor, Petroleum, Gas, and Chemical Processing and Utilities 9212 • Technical Sales Specialist – Wholesale Trade 6221 • Utilities Manager 0912

University	Workplace
- Architects 2151 - Chemical Engineer 2134 - Climatologist 2114 - Economist and Economic Policy Researcher and Analyst 4162 - Electrical and Electronics Engineer 2133 - Engineering Manager 0211 - Environmental Assessor 4161 - Geological Engineer 2144 - Mechanical Engineer 2132 - Petroleum Engineer 2145 - Physicist 2111	- Assembler, Fabricator, Inspector and Tester: Motors, Transformers, and Electrical Appliances 9484 - Electronic Service Technicians 2242 - Gas Maintenance Workers 7442 - Home Energy Evaluator 2264 - Oil and Gas Well Drilling Worker and Services Operator 8412 - Petroleum, Gas, and Chemical Process Operator 9232 - Renewable Energy Products Salesperson 6421 - Residential and Commercial Installer and Servicer 7441 - Solar Panel Chemical Process Technician 2211 - Wind Turbine Material Controller 1471

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Energy Sector

The following are examples of programs and training related to careers in the energy sector and the accreditations associated with each.

Apprenticeship Training

Electrician – Construction and Maintenance	Certificate of apprenticeship/ certificate of qualification
Fitter Welder	Certificate of qualification
Industrial Electrician	Certificate of qualification
Industrial Instrument Mechanic	Certificate of qualification
Industrial Mechanic Millwright	Certificate of qualification
Powerline Technician	Certificate of qualification
Process Operator	Certificate of qualification
Refrigeration and Air Conditioning Mechanic	Certificate of apprenticeship/ certificate of qualification
Steamfitter	Certificate of qualification

College

Architectural Technician/Technologist	Diploma
Building Renovation Technician	Diploma

Chemical Engineering Technician – Environmental	Diploma
Chemical Engineering Technology – Lab and Process Control	Diploma
Civil Engineering Technician/Technologist	Diploma
Construction Engineering Technician	Diploma
Earth Resources Technician	Diploma
Electrical Engineering Technician/Technologist	Diploma
Electromechanical Engineering Technician	Diploma
Energy System Engineering Technician	Diploma
Energy Systems Technology	Diploma
Environmental Control	Diploma
Environmental Science Technician/Technologist	Diploma
Gas and Oil Burner Technician/Geomatics Technician	Diploma
Heating, Ventilation, and Air Conditioning (HVAC)	Diploma
Instrumentation Engineering Technician/Technologist	Diploma
Manufacturing Engineering	Diploma
Manufacturing Management	Diploma
Mechanical Engineering Technician/Technologist	Diploma
Power Engineering	Diploma
Powerline Technician	Diploma
Quality Assurance – Manufacturing and Management	Diploma
Renewable Energy Technician	Diploma
Sustainable Energy and Building Technology	Diploma
Transportation Engineering Technology	Diploma
Utilities Systems Operator	Diploma
Wind Turbine Technician	Diploma

University

Architectural Science	Bachelor's degree
Chemistry	Bachelor's degree
Engineering Physics	Bachelor's degree
Engineering, Chemical	Bachelor's degree
Engineering, Civil	Bachelor's degree
Engineering, Electrical	Bachelor's degree
Engineering, Electromechanical	Bachelor's degree
Engineering, Environmental	Bachelor's degree

Engineering, Geological	Bachelor's degree
Engineering, Industrial	Bachelor's degree
Engineering, Mechanical	Bachelor's degree
Engineering, Nuclear	Bachelor's degree
Engineering, Petroleum	Bachelor's degree
Environmental Science	Bachelor's degree
Geology	Bachelor's degree
Physics	Bachelor's degree
Sustainable Development	Bachelor's degree
Technology	Bachelor's Degree

Training for the Workplace

Building Environmental Systems	Certificate
Computer-aided Design (CAD)	Certificate
Domestic Energy Assessment	Certificate
Heating, Ventilating and Air Conditioning (HVAC)	Certificate
Photovoltaic Installation	Certificate
Radiation Safety	Certificate
Sustainable Building Design and Construction	Certificate
Welder Fitter	Certificate

Environment

The SHSM–Environment enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on environmental science or environmental studies. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES



For local labour market opportunities in this sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the environment sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Environment

The SHSM–Environment has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four environment major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the environment sector. The three credits include:
 - two in English¹ (one credit must be in Grade 12) and
 - one in mathematics;
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	2	2	2	2
Mathematics <i>including a CLA</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in environment requires students to complete seven sector-recognized certifications and/or training courses/programs.

Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Four compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	compass/map global positioning system (GPS)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three electives from the list below			
animal and plant management	Below Zero	chainsaw safety	customer service
geographic information system (GIS)	habitat restoration	Hike Ontario	introduction to stream assessment protocol
knot techniques	leadership skills	Leave No Trace	life-saving (Bronze Cross)
Ontario Hunter Education	paddling techniques	Pleasure Craft Operator	Project Wild
radio operator	search and rescue	species identification (e.g., fish, birds, plants, trees, small mammals)	water/ice safety
watershed management	wilderness first aid	wilderness survival	Working at Heights

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the environmental sector (an example of job twinning)
- a day-long observation of an environmental sector employer or employee (an example of job shadowing)
- a one- or two-week work experience with a member of an environmental non-governmental organization (NGO) or an employee in the environmental sector (an example of work experience)
- attendance at a trade show (e.g., Toronto Sportsmen's Show, Outdoor Adventure Show), a conference, or a workshop focusing on the environmental sector
- assisting with trail maintenance and trail cleanup
- participating in Envirothon

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See [Section A1.5](#) for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See [Section A1.6](#) for more on Essential Skills and work habits.

Pathways for the SHSM–Environment

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page ENV-7.

Awareness building (Grades 7 and 8)

Shaping Our Schools, Shaping Our Future, published in June 2007, is the report of the Working Group on Environmental Education, appointed by the Ontario government to make recommendations about environmental education in Ontario. The report states that environmental education should be “highly visible within, and reflected across, the Ontario curriculum” (page 13). With the implementation of this recommendation, students will have opportunities to learn about the environment in every elementary and secondary school grade.

The SHSM–Environment provides a focus for students in the elementary and junior high school grades who become sufficiently interested in the environment to want to pursue a career in this area. See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for more information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. Teachers who want to encourage students interested in enrolling in the SHSM–Environment program can make sure that these students are better informed about this sector by developing activities that both address curriculum expectations in geography and science courses and letting students explore environmental issues. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in this sector:

- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- **Civics (compulsory):** This Grade 10 course enables students to explore what it means to be an informed, participating citizen in a democratic society. Students learn about the elements of democracy in local, national, and global contexts, about political reactions to social change, and about political decision-making processes in Canada.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary Diploma (OSSD) with an SHSM–Environment by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

TOOLS AND RESOURCES



Visit the ministry’s SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.

The environment is a very wide field of study that includes various career pathways and employment opportunities. Two areas of focus in this sector are environmental science and environmental studies.

An environmental science focus is geared towards students interested in careers in sciences, engineering, technology, and research. In the college and university pathway, students with an environmental science focus are advised to take additional math credits in Grade 12 (Advanced Functions [MHF4U] and/or Mathematics of Data Management [MDM4U]).

An environmental studies focus is for students more interested in recreation, tourism, and environmental policy.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Students may want to consider the Ministry of Natural Resources Ontario Ranger Program as a summer cooperative education placement.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Environment

This template shows program requirements for the SHSM–Environment in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Environment.

- Shaded boxes represent required credits in the bundle for the SHSM–Environment.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of three. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway <i>Specialization</i> Grades 11–12	College Pathway <i>Specialization</i> Grades 11–12	University Pathway <i>Specialization</i> Grades 11–12	Workplace Pathway <i>Specialization</i> Grades 11–12
2 English credits (C)* (one credit must be in Gr. 12)	2 English credits (C)* (one credit must be in Gr. 12)	2 English credits (C)* (one credit must be in Gr. 12)	2 English credits (C)* (one credit must be in Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
4 environment major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 environment major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 environment major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 environment major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Environment Sector

The following table provides examples of occupations in the environment sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Arborist 2225	• Aquaculture Operator and Manager 8257 • Biological Technologist or Biological Technician 2221 • Conservation Officer or Fishery Officer 2224 • Environmental Technician 2231 • Field Technician – Air Pollution 2231 • Forest Ecologist 2121 • Forestry Technologist/Technician 2223 • Geological and Mineral Technologist/Technician 2212 • Habitat Management Technician 2221 • Hatchery or Fisheries Technician 2221 • Mapping and Related Technologist/Technician 2255 • Quality Control – Chemical Engineering Technologist 2211 • Silviculture and Forestry Workers 8422 • Soil Testing Technologist 2231 • Technician – Pollution Control 2231

University	Workplace
• Air Quality Meteorologist 2114 • Chemical Engineer 2134 • Climatologist 2114 • Environmental and Occupational Toxicologist 2121 • Environmental Biologist 2121 • Environmental Engineer 2131 • Environmental Impact Analyst 4161 • Environmental Planner 2153 • Environmental Program Coordinator 4161 • Forestry Professional 2122 • Geological Engineer 2144 • Geologist and Geochemist 2113 • Interpretive Naturalist 2121 • Landscape Architects 2152 • Meteorologist 2114 • Urban and Land Use Planners 2153 • Waste Diversion Consultant 4161	• Canoeing Guide 6442 • Fishing Guide 6442 • Hunting Guide 6442 • Landscaping and Grounds Maintenance Workers 8612 • Outdoor Sport and Recreation Guide 6442 • Outfitter 6442 • Recreation Program Leader 5254 • Recycled Paper Handler 7452 • Silviculture and Forestry Workers 8422 • Wastewater Treatment Plant Operator 9424

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Environment Sector

The following are examples of programs and training related to careers in the environment sector and the accreditations associated with each.

Apprenticeship Training

Arborist	Certificate of apprenticeship/ certificate of qualification
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College

Chemical Engineering Technology – Environmental	Advanced diploma
Ecosystem Management Technology	Diploma/advanced diploma
Environmental and Civil Engineering Technology	Diploma
Environmental and Natural Resource Studies	Diploma
Environmental Health and Safety	Bachelor's degree
Environmental Landscape Management	Diploma
Environmental Science and Technology	Bachelor's degree
Environmental Technology	Diploma/advanced diploma

Fish and Wildlife Technician/Technology	Diploma/advanced diploma
Geographic Information Systems – Applications	Diploma
Geographic Information Systems – Cartography	Diploma
Earth Resources Technology	Diploma
Geomatics Technology	Diploma
Integrated Environmental Site Remediation	Bachelor's degree
Natural Resources – Law Enforcement	Diploma
Outdoor Adventure Skills	Diploma
Park Operations and Outdoor Recreation	Diploma

University

Agricultural and Environmental Science	Bachelor's degree
Conservation and Restoration Ecology	Bachelor's degree
Earth Science (Geology and Geomorphology)	Bachelor's degree
Ecology	Bachelor's degree
Engineering (Environmental, Water Resources, Biological, Geological, Civil)	Bachelor's degree
Environment and Business	Bachelor's degree
Environment and Resource Studies	Bachelor's degree
Environmental Biology	Bachelor's degree
Environmental Chemistry	Bachelor's degree
Environmental Design	Bachelor's degree
Environmental Geography	Bachelor's degree
Environmental Science	Bachelor's degree
Environmental Studies	Bachelor's degree
Environmental Toxicology	Bachelor's degree
Geomatics and Geographic Information Systems	Bachelor's degree
Land Resource and Soil Science	Bachelor's degree
Natural Resources Management	Bachelor's degree
Outdoor Recreation	Bachelor's degree
Renewable Resources	Bachelor's degree

Training for the Workplace

Campground Operator	Certificate
Canoe/Hiking Guide	Certificate
Customer Service – Environmental Sector	Certificate

Ecotourism and Adventure Tourism	Certificate
Freshwater Angling Guide	Certificate
Hunting Guide	Certificate
Municipal Grounds Person	Certificate
Outdoor Adventure Skills	Certificate
Tour Guide	Certificate

Food Processing

The SHSM–Food Processing enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on the manufacturing processes used in food production or the science of food processing. Schools may choose to provide a particular choice of focus aligned to the particular pathway the student is pursuing, e.g., the manufacturing processes focus may be more appropriate to a student pursuing an apprenticeship pathway, while a student pursuing a university pathway may be more interested in a food science focus. This focus is achieved through the selection of the four major credits in the bundle.



TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.



INSIGHT

The requirements of this SHSM are unique and are geared to the food processing sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Food processing

The SHSM–Food processing has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four food processing major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the food processing sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills

FIND IT!

See **Section A1.2** for more on SHSM credits.



Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in food processing requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM.

Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board in consultation with their advisory committee that has representation from the sector. The requirements are summarized in the table below:

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Four compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Food Safety Level 1	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three electives from the list below			
<i>Note: School boards may be approved to offer additional certifications based on local circumstances</i>			
basic electrical safety	basic hand tools and their uses	chemical handling	cleaning and sanitation in food processing
customer service	employee empowerment training	Food Handler Certification	fork lift safety
leadership skills	Lean Manufacturing	lockout/tagging	personal protective equipment – food processing
quality management (ISO)	safe lifting practices	specialized business program/competition (e.g., Junior Achievement Company Program, Summer Company Program)	statistical process control (SPC)
supply chain management	transportation of dangerous goods	waste management	

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the food processing sector (an example of job twinning)

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

- a day-long observation of a skilled tradesperson in the food processing sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- a tour of a food processing company
- attendance at a food processing trade show, conference, or job fair
- attendance at demonstrations and hands-on activities presented by food processing companies

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Food Processing

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page FP-6.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Exploring Technologies:** This Grade 9 course is recommended for all students following pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including manufacturing technology and hospitality and tourism technology, by engaging in activities related to them.
- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School diploma (OSSD) with an SHSM—Food Processing by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Food processing sector representatives have identified knowledge of basic business practices and food science, depending upon the focus, as important for students as they prepare for careers in this sector.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP) which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Food Processing

This template shows program requirements for the SHSM–Food Processing in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Food Processing.

- Shaded boxes represent required credits in the bundle for the SHSM–Food Processing.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credits (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 science credit* or business studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science credit* or business studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science credit* or business studies credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science credit* or business studies credit* (in either Gr. 11 or Gr. 12)
4 food processing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 food processing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 food processing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 food processing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Food Processing Sector

The following table provides examples of occupations in the food processing sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
- Butcher – retail 6331 - Baker 6332 - Millwright 7311 - Industrial Electrician 7241 - Process Control and Machine Operators, Food and Beverage Processing 9461	- Food Processing Technician 2211 - Laboratory Technicians 2211 - Packaging Technician 9461 - Quality Control Technician – Food Processing 2233
University	Workplace
- Supervisors 9213 - Food Scientist 2121 - Food Inspectors 2263 - Registered Dietitians 3132 - Food Research and Development 4163 - Quality Assurance Regulatory Supervisor 9213	- Entry Level Line Operator 9461 - Process Labourers 9617 - Sanitation Workers 7621 - Machine Operators 9461 - Material Handler 7452 - Packaging 9617 - Warehousing 7452

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Food Processing Sector

The following are examples of programs and training related to careers in the food processing sector and the accreditations associated with each.

Apprenticeship Training

Electrician	Certificate
General Machinist	Certificate of apprenticeship/ certificate of qualification
Industrial Mechanic Millwright	Certificate of apprenticeship/ certificate of qualification
Process Operator-Food Processing	Certificate of apprenticeship/ certificate of qualification

Retail Meat Cutter	Certificate of apprenticeship certificate of qualification
Baker	Certificate of apprenticeship/ certificate of qualification

College

Industrial Engineering Technology	Management Diploma
Industrial Management	Diploma
Integrated Manufacturing Systems	Diploma
Manufacturing Engineering	Technology Diploma
Manufacturing Management	Diploma
Mechanical Engineering	Technician Diploma
Mechanical Engineering	Technology Diploma
Process Automation	Bachelor of Applied Technology

University

Food Scientist	Bachelor's degree
Registered Dietician	Bachelor's degree
Industrial Engineering	Bachelor's degree
Industrial Engineering with a Food Processing Engineering Option	Bachelor's degree
Manufacturing Engineering	Bachelor's degree
Manufacturing Engineering and Management	Bachelor's degree
Mechanical Engineering – Food processing, Controls, Automation, and Robotics	Bachelor's degree

Training for the Workplace

Manufacturing Techniques	Certificate
Mechanical Techniques – Manufacturing	Certificate
Safe Food Handling	Certificate
LEAN Manufacturing	Certificate
ISO (International Organization for Standardization) Quality Management	Certificate

Forestry

The Canadian forest products industry makes a significant contribution to employment generation in both rural and urban Canada. The SHSM–Forestry enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace.

TOOLS AND RESOURCES



For local labour market opportunities in this sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the forestry sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Forestry

The SHSM–Forestry has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four forestry major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the forestry sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or Canadian and world studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.



1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Canadian and World Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in forestry requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Four compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	compass/map/global positioning system (GPS)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three electives from the list below			
bear safety	chainsaw safety	customer service	fire extinguisher use
harvesting equipment safety	health and safety – basic	hoisting and rigging	leadership skills
personal protective equipment – forestry	professional cable skidding	propane safety	safe tree cutting and logging
sector-specific vehicle operation and safety	skidder/loader safety	suspended access equipment	vehicle safety (e.g., ATV, loader, skidder)
wilderness first aid	Working at Heights		

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the forestry sector (an example of job twinning)
- a day-long observation of staff at a lumber yard (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- a tour of a forestry industry workplace (e.g., a saw mill)
- a volunteer experience planting trees as part of a community initiative
- attendance at a forestry sector trade show, conference, or job fair

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Forestry

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page FOR-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including forestry sector technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Green Industries or Transportation Technology: These course are recommended for any Grade 10 student who is considering enrolling in an SHSM–Forestry program.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Forestry by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Forestry sector representatives have identified knowledge of entrepreneurship and basic business practices as important for students as they prepare for careers in this sector.

Therefore, it is recommended that in Grade 11 or 12 students do one of the following:

- complete an entrepreneurship course offered in the Ontario business studies curriculum
- pursue an extracurricular activity focused on entrepreneurship (e.g., Junior Achievement’s Company Program)

Students pursuing an apprenticeship pathway should consider Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Forestry

This template shows program requirements for the SHSM–Forestry in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Forestry.

- Shaded boxes represent required credits in the bundle for the SHSM–Forestry.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway <i>Specialization</i> Grades 11–12	College Pathway <i>Specialization</i> Grades 11–12	University Pathway <i>Specialization</i> Grades 11–12	Workplace Pathway <i>Specialization</i> Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 forestry major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 forestry major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 forestry major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 forestry major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Forestry Sector

The following table provides examples of occupations in the forestry sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.



Apprenticeship Training	College
Arborist 2225	- Forest Engineering Technician/Technologist 2223 - Forest Inventory Resource Officer 2223 - Forest Products Technologist 2211 - Forest Resource Technician 2223 - GIS Technician/Technologist 2255
University	Workplace
- Forest Ecologist 2121 - Forester 2122 - Forestry Engineer 2122 - Project Management – Forester 2122 - Surveyor 2131	- Brush Cutter – Forestry 8422 - Cone Harvester/Harvest Hand 8432 - Forest Firefighter 8422 - Forest Worker 8421 - Mechanical Harvester Operator – Logging 8421 - Saw Filer/Fitter 7383 - Silviculture Worker 8422 - Spacing Saw Operator – Forestry 8422 - Tree Planter 8616

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Forestry Sector

The following are examples of programs and training related to careers in the forestry sector and the accreditations associated with each.

Apprenticeship Training

Arborist	Certificate of apprenticeship/ certificate of qualification
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College

Arboriculturist	Diploma
Enforcement Officer – Forestry	Diploma
Extension Ranger – Forestry	Diploma
Field Naturalist	Diploma
Forest Fire Technician	Diploma
Forestry Technician	Diploma
Geomatics/GIS Technician	Diploma

University

Forestry Engineer	Bachelor's degree
Project Management – Forester	Bachelor's degree

Training for the Workplace

Brusher	Certificate
Cone Harvester	Certificate
Forestry Worker	Certificate
Saw Filer/Fitter	Certificate
Spacer	Certificate
Tree Planter	Certificate

Health and Wellness

The SHSM–Health and Wellness enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on health care, fitness, or child care and family services. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the health and wellness sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Health and Wellness

The SHSM–Health and Wellness has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four health and wellness major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the health and wellness sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or social sciences and humanities (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Science or Social Sciences and Humanities <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in health and wellness requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table.

Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	infection control	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three (3) electives from the list below			
advanced training in a technique (e.g., feeding, assistance, airway management, IV insertion)	allergy awareness	ambulation, lifting, and transfers	animal first aid
babysitting	behaviour management	child safety and injury prevention	coaching/personal trainer
communication skills	conflict resolution	customer service	ethical considerations
fire extinguisher use	fitness	group dynamics	lab practices
leadership skills	marine and wilderness first aid	medical terminology	non-violent crisis intervention
personality inventory	safe body mechanics	safe food handling – basic	sign language
specialized care (e.g., diabetes, dementia, nutrition)	sterile techniques	stress management techniques	SafeTALK
waste management	wrapping and taping for performance and injury		

3. Experiential learning and career exploration activities²

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the health and wellness sector (an example of job twinning)
- a day-long observation of a health and wellness sector employer or employee (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

2. Experiential Learning and Career Exploration activities in the health and wellness sector may require a student to consent to a police records check, immunization clearance and/or Confidentiality and Privacy Agreements.

- a volunteer experience in a long-term care facility
- an experience coaching an elementary school student in reading as part of a reading buddy program, or other curricular or extracurricular activities
- assisting in an exercise class in a long-term care facility
- attendance at a health and wellness sector career fair

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.



4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Health and Wellness

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page H&W-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Any Grade 9 or 10 course related to the specific specialty of interest (e.g., Individual and Family Living, Healthy Active Living Education, Food and Nutrition)
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Health Care: This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Health and Wellness program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their the Ontario Secondary School Diploma (OSSD) with an SHSM–Health and Wellness by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Some experiential learning placements may require students to provide a record of vaccinations and/or undergo a police check as a prerequisite for participation in the experience.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Health and Wellness

This template shows program requirements for the SHSM–Health and Wellness in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Health and Wellness.

- Shaded boxes represent required credits in the bundle for the SHSM–Health and Wellness.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 science* or social sciences and humanities credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science* or social sciences and humanities credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science* or social sciences and humanities credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science* or social sciences and humanities credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 health and wellness major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 health and wellness major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 health and wellness major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 health and wellness major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Health and Wellness Sector

The following table provides examples of occupations in the health and wellness sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Child and Youth Worker 4212 • Early Childhood Educator 4214 • Educational Assistant 6472	• Ambulance Attendants and Other Paramedical Occupations 3234 • Biomedical Engineering Technologist 2241 • Community and Social Service Worker 4212 • Dental Hygienist or Dental Assistant 3222 • Documentation Clerk 1441 • Funeral Director or Embalmer 6272 • Health Care Aide 3413 • Hospital Information Clerk 1434 • Medical Laboratory Technician 3212 • Medical Secretary 1243 • Pharmacy Technician 3414 • Practical Nurse 3233 • Primary Care Paramedic 3234 • Registered Massage Therapist 3235 • Registered Orthopaedic Technologist 3414 • Respiratory Therapist 3214

University	Workplace
• Audiologist or Speech-Language Pathologist 3141 • Chiropractor 3122 • Dentist 3113 • Dietitian 3132 • Family, Marriage, and Other Related Counsellors 4153 • Hospital Equipment Sales Representative 6221 • Kinesiologist 3235 • Medical Microbiologist 3111 • Medical Sonographer 3216 • Midwife 3232 • Nutritionist 3132 • Optometrist 3121 • Pharmacist 3131 • Podiatrist 3123 • Psychiatrist 3111 • Registered Nurse 3152 • Sports Therapist 3144	• Blood Donor Clinic Assistant 3414 • Certified Personal Trainer 5254 • Doctor's Office Receptionist 1414 • Fitness Instructor 5254 • Hospital Admitting Clerk 1414 • Hospital Cleaner 6661 • Hospital Porter 3413 • Lifeguard 5254 • Recreation Program Leader 5254

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Health and Wellness Sector

The following are examples of programs and training related to careers in the health and wellness sector and the accreditations associated with each.

Apprenticeship Training

Aboriginal Early Childhood Education Worker	Certificate of apprenticeship/ certificate of qualification
Child and Youth Worker	Certificate of apprenticeship/ certificate of qualification
Early Childhood Educator	Certificate of apprenticeship/ certificate of qualification

College

Activation Coordinator – Gerontology	Diploma
Advanced Care Paramedic	Diploma
Cardiovascular Technician	Diploma
Child and Youth Worker	Diploma

Denturist	Diploma
Developmental Service Worker	Diploma
Disaster Management	Diploma
Early Childhood Education	Diploma/bachelor's degree
Fitness and Health Promotion	Diploma
Fitness and Lifestyle Management	Diploma
Funeral Services	Diploma
Health Information Management	Diploma/bachelor's degree
Hearing Investment Specialist	Diploma
Laboratory Technology	Diploma
Massage Therapy	Diploma
Medical Office Administration	Diploma
Medical Transcriptionist	Diploma
Optical/Optometric	Diploma
Orthotics/Prosthetics	Diploma
Pharmacy Assistant	Diploma
Physiotherapy Assistant and Occupational Therapy Assistant	Diploma
Practical Nursing	Diploma
Primary Care Paramedic	Diploma
Recreation and Leisure Services	Diploma
Registered Nutritional Therapy	Diploma
Social Service Worker	Diploma
Sports Therapy/Sports Management	Diploma/bachelor's degree

University

Biomedical Toxicologist	Bachelor's degree
Child Studies	Bachelor's degree
Dentistry	Doctor's degree
Kinesiology	Bachelor's degree
Medical Radiation Sciences	Bachelor's degree
Medicine	Doctor's degree
Midwifery	Bachelor's degree
Nurse/Nurse Practitioner	Bachelor's degree
Nutritionist/Dietician	Bachelor's degree
Occupational and Public Health	Bachelor's degree

Occupational Therapy	Master's degree
Pharmacy	Bachelor's degree
Physical Therapy	Master's degree
Social Work	Bachelor's degree/master's degree
Speech-Language Pathology	Master's degree

Training for the Workplace

Acupuncture	Certificate
Central Processing Technician	Certificate
Clinical Assistant	Certificate
Dietary Aide	Certificate
Fitness/Personal Trainer	Certificate
Hospital Support Services	Certificate
Recreational Aide	Certificate
Specimen Collection/Laboratory Aide	Certificate

Horticulture and Landscaping

The SHSM–Horticulture and Landscaping provides students with a strong foundation for a wide variety of careers in the horticulture and landscaping sector. It enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the horticulture and landscaping sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Horticulture and Landscaping

The SHSM–Horticulture and Landscaping has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four horticulture and landscaping major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the horticulture and landscaping sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.



1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in horticulture and landscaping requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	plant identification	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three (3) electives from the list below			
cash handling and register training	customer service	edging and trimming	grading and drainage
grading and sodding	herbicide and pesticide	ladder safety training	lawn mower use and safety
leadership skills	paver installation	plant layout	pruning
tree planting	work orders	Working at Heights	

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the horticulture and landscaping sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the horticulture and landscaping sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- attendance at college or university classes in a horticulture and/or landscaping program
- the design and installation of a landscaping project on the grounds of the school or school board
- attendance at a workshop put on by a garden centre or nursery
- a tour of a greenhouse in which research is conducted
- a volunteer experience with a community landscaping initiative

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Horticulture and Landscaping

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page H&L-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including Green Industries, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Green Industries: This course is recommended for any Grade 10 student who is considering enrolling in an SHSM– Horticulture and Landscaping.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Horticulture and Landscaping by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Horticulture and Landscaping

This template shows program requirements for the SHSM–Horticulture and Landscaping in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Horticulture and Landscaping.

- Shaded boxes represent required credits in the bundle for the SHSM–Horticulture and Landscaping.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 horticulture and landscaping major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 horticulture and landscaping major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 horticulture and landscaping major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 horticulture and landscaping major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Horticulture and Landscaping Sector

The following table provides examples of occupations in the horticulture and landscaping sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.



Apprenticeship Training	College
• Arborist 2225 • Horticultural Technician 2225 • Small Engine Technician 7335	• Golf Course Technician 8612 • Landscape Technologist 2225 • Parks Operations Manager 0114 • Tree Service Technician 2225 • Urban Forestry and Park Technician 2122
University	Workplace
• Biologist 2121 • Botanist 2121 • Horticulturalist 2225 • Landscape Architect 2151 • Plant Pathologist 2121	• Gardener 2225 • Greenhouse Worker 8432 • Grower 8254 • Landscape Labourer 8612 • Landscaping and Grounds Maintenance Contractors 8255 • Lawn and Garden Retail Salesperson 6421 • Plant Propagator 8432

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Horticulture and Landscaping Sector

The following are examples of programs and training related to careers in the horticulture and landscaping sector and the accreditations associated with each.

Apprenticeship Training

Arborist	Certificate of apprenticeship/ certificate of qualification
Horticultural Technician	Certificate of apprenticeship/ certificate of qualification
Small Engine Technician	Certificate of apprenticeship/ certificate of qualification

College

Floriculture/Retail	Diploma
Golf Course Management	Diploma
Horticulture Technician	Diploma
Landscape Design	Diploma
Landscape Technician	Diploma
Landscape Technology	Diploma
Ornamental Horticulture	Diploma
Parks Operations and Services	Diploma
Urban Tree Maintenance	Diploma

University

Botany	Bachelor's degree
Horticulture and Landscaping	Bachelor's degree
Horticulture Science	Bachelor's degree
Landscape Architecture	Bachelor's degree
Plant Agriculture	Bachelor's degree
Plant Biology	Bachelor's degree
Plant Sciences	Bachelor's degree

Training for the Workplace

Greenskeeper	Certificate
Irrigation Technician	Certificate
Nursery Production	Certificate
Pesticide Technician	Certificate

Hospitality and Tourism

The SHSM–Hospitality and Tourism enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on tourism or hospitality. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES



For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the hospitality and tourism sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Hospitality and Tourism

The SHSM–Hospitality and Tourism has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four hospitality and tourism major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the hospitality and tourism sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009, page 17*).

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in hospitality and tourism requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining two are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	customer service	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Two (2) electives from the list below			
advanced training in a technique, (e.g., paddling)	cash handling and register training	compass/map/global positioning system (GPS)	cook/line cook
event coordination	fire safety training	fishing guide	geographic information system (GIS)
guest services	heritage interpreter	housekeeping services	introduction to hospitality management
leadership skills	life saving	safe food handling – advanced	safe food handling – basic
Smart Serve	spa etiquette	spa service	ticket agent
tour guide	tourism – basic	wilderness first aid	wilderness survival

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the hospitality and tourism sector (an example of job twinning)
- a day-long observation of a chef (an example of job shadowing)
- a one- or two-week placement at a local tourist attraction (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- attendance at a hospitality sector trade show, conference, or job fair
- a tour of a tourism or hospitality business
- assisting at a community competition or event
- participation in a wilderness survival camp

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Hospitality and Tourism

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page H&T-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including hospitality and tourism technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Hospitality and Tourism (TFJ2O): This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Hospitality and Tourism program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary Diploma (OSSD) with an SHSM—Hospitality and Tourism by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM—Hospitality and Tourism

This template shows program requirements for the SHSM—Hospitality and Tourism in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM—Hospitality and Tourism.

- Shaded boxes represent required credits in the bundle for the SHSM—Hospitality and Tourism.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 hospitality and tourism major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 hospitality and tourism major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 hospitality and tourism major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 hospitality and tourism major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Hospitality and Tourism Sector

The following table provides examples of occupations in the hospitality and tourism sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Baker 6252 • Butcher and Meat Cutter 6251 • Chef 6241 • Cook 6242 • Special Events Coordinator 1226	• Accommodation Service Manager 0632 • Conference and Event Planner 1226 • Food Service Supervisor 6212 • Hotel/Resort Manager 0015 • Restaurant and Food Service Manager 0631 • Tourism Information Officer 5124 • Travel Counsellor 6431
University	Workplace
• Dietician 3132 • Food Bacteriologist 2121 • Nutritionist 3132 • Public and Environmental Health Officer 2263 • Public Relations and Communications 5124	• Executive Housekeeper 6213 • Food and Beverage Server 6453 • Food Counter Attendant and Kitchen Helper 6641 • Food Stylist 5243 • Hotel/Front Desk Clerk 6435 • Hotel Valet 6683 • Purser and Flight Attendant 6432 • Receptionist and Front Desk Clerk 1414 • Reservation Agent 6434 • Sales Representative – Wine, Food, Wholesale 6411 • Ticket Agent 6434 • Tour and Travel Guide 6441 • Tourist Information Clerk 1453

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Hospitality and Tourism Sector

The following are examples of programs and training related to careers in the hospitality and tourism sector and the accreditations associated with each.

Apprenticeship Training

Assistant Cook	Certificate of apprenticeship/ certificate of qualification
Baker	Certificate of apprenticeship/ certificate of qualification
Chef	Certificate of apprenticeship/ certificate of qualification
Cook	Certificate of apprenticeship/ certificate of qualification
Pâtissier	Certificate of apprenticeship/ certificate of qualification
Retail Meat Cutter	Certificate of apprenticeship/ certificate of qualification
Special Events Coordinator	Certificate of apprenticeship/ certificate of qualification

College

Baking and Pastry Arts	Diploma
Chef	Diploma
Cook	Diploma
Culinary Management	Diploma
Hotel, Resort, and Restaurant Management	Diploma
Recreation and Leisure Services	Diploma
Special Events Management	Diploma
Tourism and Travel – Adventure and Ecotourism	Diploma
Tourism Marketing and Operations	Diploma

University

Foods and Nutrition	Bachelor's degree
Hospitality and Tourism Management	Bachelor's degree
Hotel and Food Administration	Bachelor's degree
Nutritional Sciences	Bachelor's degree

Outdoor Recreation, Parks and Tourism	Bachelor's degree
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Tourism and Environment	Bachelor's degree
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Training for the Workplace

Banquet Food and Beverage Server	Certificate
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Reservations Sales Agent	Certificate
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Information and Communications Technology

The SHSM–Information and Communications Technology enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on communication systems, computer systems, or software and digital media. This focus is achieved through the selection of the four major credits in the bundle.



TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.



INSIGHT

The requirements of this SHSM are unique and are geared to the ICT sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Information and Communications Technology

The SHSM–Information and Communications Technology has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four information and communications technology major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the information and communications technology sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in the arts or business studies or science (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.



1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
The Arts or Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in ICT requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See **Section A1.3** for more on SHSM certifications and training.



Three (3) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three (3) electives from the list below			
advanced training in a technique (e.g., website design, coding, digital lighting, search engine optimization)	basic electrical safety	CISCO networking	computer hardware
counterfeit detection	customer service	electronics – basic	elevated work platforms
ergonomics	health and safety – basic	intellectual property	interfacing equipment
Internet security	leadership skills	lighting and sound equipment maintenance	lockout/tagging
network cabling	network configuration	photography	recording equipment
software 1 (e.g., cloud, mobile computing and applications)	software 2 (e.g., programming)	technical support	Working at Heights

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the ICT sector (an example of job twinning)
- a day-long observation of an ICT sector worker (e.g., telecommunications technician) (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the ICT sector (e.g., a computer game developer) (an example of work experience)
- attendance at a sector or trade show, a conference, a symposium, or a job fair
- participation in a local, provincial, or national contest or competition with a focus on ICT
- a tour of a local television/film studio or network monitoring centre

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Information and Communications Technology

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page ICT-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including ICT, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Communications Technology (TGJ20), Introduction to Computer Studies (ICS20), or Computer Technology (TEJ20): These courses are recommended for any Grade 10 student who is considering enrolling in an SHSM–Information and Communications Technology program. They provide students with opportunities to explore the ICT sector, identify personal interests and aptitudes, and gain a better understanding of the program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Information and Communications Technology by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students have the option of choosing an arts, a science, or a business studies course, depending on their SHSM focus and postsecondary plans, as shown in the following examples.

- Students focusing on communications systems who have an interest in telecommunications might take a science course, whereas students interested in broadcast technology might take a science or visual arts course, or a business studies course in ICT.
- Students focusing on computer systems and who are planning to go to university to pursue a career in computer engineering, or to enter an apprenticeship or college program to become a hardware or network technician, might take a course in physics. Students planning to enter the workplace in a sales capacity directly after graduation might take a business studies course in marketing.
- Students focusing on software and digital media (e.g., developing video or computer games, 3-D modelling, or simulations) might consider taking a physics or visual arts course, whereas students interested in web page design might take visual arts or a business studies course in marketing or entrepreneurship.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Information Communications Technology

This template shows program requirements for the SHSM–Information Communications Technology in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM– Information Communications Technology.

- Shaded boxes represent required credits in the bundle for the SHSM– Information Communications Technology.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science or arts credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science or arts credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science or arts credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science or arts credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 information communications technology major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 information communications technology major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 information communications technology major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 information communications technology major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Information and Communications Technology Sector

The following table provides examples of occupations in the ICT sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
- Computer Network Technician 2281 - Help Desk Technology Support Analyst 2282 - Telecommunications Installation and Repair/ Network Cabling Specialist 7246 - Telecommunications Line and Cable Worker 7245	- Audio and Video Recording Technician 5225 - Broadcast Technician 5224 - Electrical and Electronics Engineering Technologist and Technician 2241 - Electronic Service Technician 2242 - Film and Video Camera Operator 5222 - Graphic Designer, Illustrator, Animator 5241 - Systems Testing Technician 2283 - User Support Technician 2282 - Web Designer and Developer 2175
University	Workplace
- Computer Engineer 2147 - Computer Programmer and Interactive Media Developer 2174 - Information Systems Analyst 2171 - Software Engineer and Designer 2173 - Technical Sales Specialists 6221	- Desktop Publishing Operator 1423 - Residential and Commercial Installer and Servicer – Satellite Dish Installer 7441 - Retail Salesperson and Sales Clerk 6421 - Telecommunications Cable Installer Helper and Splicer Helper 7612

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Information and Communications Technology Sector

The following are examples of programs and training related to careers in the ICT sector and the accreditations associated with each.

Apprenticeship Training

Hardware Technician

Certificate of apprenticeship/
certificate of qualification

Information Technology Contact Centre

- Customer Care Agent

Certificate of apprenticeship/
certificate of qualification

• Inside Sales Agent	Certificate of apprenticeship/ certificate of qualification
• Technical Support Agent	Certificate of apprenticeship/ certificate of qualification
Network Cabling Specialist	Certificate of apprenticeship/ certificate of qualification
Network Technician	Certificate of apprenticeship/ certificate of qualification

College

Advertising	Diploma
Animation	Bachelor's degree /diploma
Audio Production, Recording, and Engineering Technology	Diploma
Communication, Culture and Information Technology	Bachelor's degree
Computer/Digital Animation	Diploma
Computer Engineering Technology	Diploma/advanced diploma
Computer Networking and Technical Support	Diploma
Computer Programming	Diploma
Computer Science Technology	Advanced diploma
Computer Security Investigations	Advanced diploma
Computer Systems Technology	Diploma
Corporate Media Production	Diploma
Digital Media Arts	Diploma
Digital Video Production	Diploma
Electronics Engineering Technology	Diploma/advanced diploma
Film and Television Technician	Diploma
Game Development/Multimedia Development	Diploma
Graphic Design	Diploma
Graphic Design – Advertising and Package Design	Diploma
Information Systems Security	Bachelor's degree
Information Technology Support Services	Diploma
Internet Applications	Diploma
Internet Graphic Design	Diploma
Linux/Unix System Administration	Diploma
Radio Broadcasting	Diploma
Software Development	Bachelor's degree

Telecommunications Technology	Diploma/advanced diploma
Television Broadcasting	Diploma
Visual Creative Design, Digital and Media Arts	Diploma

University

Animation	Bachelor's degree
Computer Engineering	Bachelor's degree
Computer Science	Bachelor's degree
Computer Security	Bachelor's degree
Digital Media	Bachelor's degree
Electrical Engineering	Bachelor's degree
Graphic Communications Management	Bachelor's degree
Graphic Design	Bachelor's degree
Illustration	Bachelor's degree
Image Arts	Bachelor's degree
Information Technology	Bachelor's degree
Radio and Television Broadcasting	Bachelor's degree
Software Engineering	Bachelor's degree

Training for the Workplace

Adobe Certified Expert	Certificate
Animation and Rendering	Certificate
Apple Pro Applications Certification	Certificate
Art and Design Foundation	Certificate
Cisco Certifications CCNA, CCDA	Certificate
CompTIA A+ (IT Technician, Bench Technician, Remote Technician)	Certificate
CompTIA Security Plus	Certificate
CompTIA Server Plus	Certificate
Computer/Digital Animation	Certificate
Computer/Graphic Design/Image Arts	Certificate
Desktop Publishing	Certificate
Microsoft Certifications (e.g., Microsoft Office Specialist)	Certificate

Justice, Community Safety, and Emergency Services

The SHSM–Justice, Community Safety, and Emergency Services enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on legal services, policing and private security services, the armed forces, or correctional services. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES



For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the justice, community safety, and emergency services sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Justice, Community Safety, and Emergency Services

The SHSM–Justice, Community Safety, and Emergency Services has the following five required components:

1. A bundle of eight Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four justice, community safety, and emergency services major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **two other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the justice, community safety, and emergency services sector. The two credits include:
 - one in English¹ and
 - one in mathematics;
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See [Section A1.2](#) for more on SHSM credits.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	8	8	8	8

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in justice, community safety, and emergency services requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	conflict resolution	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three (3) electives from the list below			
advanced training in a technique (e.g., climbing)	ambulation, lifting, and transfer	animal first aid	basic electrical safety
compass/map/global positioning system (GPS)	confined space awareness	customer service	defensive driving
emergency preparedness – basic	emergency response techniques	emergency services tools (e.g., fire hose)	ethical considerations
fire extinguisher use	geographic information system (GIS)	group dynamics	health and safety – basic
incident management	leadership skills	legal terminology/ language of law	legal/administrative procedures (e.g., handling subpoenas)
life saving (Bronze Cross)	lockout/tagging	marine safety/marine first aid	military – basic
non-violent crisis intervention	personality inventory	Pleasure Craft Operator	radio operator
SafeTALK	safe weapon handling	search and rescue	self-defence
wilderness first aid	wilderness survival	Working at Heights	

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the justice, community safety, and emergency services sector (an example of job twinning)
- a day-long observation of a justice, community safety, and emergency services sector employer or employee (an example of job shadowing)
- a one- or two-week work experience with a municipal government official or a professional in the sector (an example of work experience)
- a volunteer experience accompanying an emergency first aid provider at a community event
- a leadership experience in a school related to drug-use awareness
- a visit to a detention centre
- a monitoring experience in a traffic court or in a courtroom of a trial, which is open to the public
- a visit to a fire hall or a military base, or attendance at an emergency services career fair

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.



POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.



4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See [Section A1.5](#) for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See [Section A1.6](#) for more on Essential Skills and work habits.



Pathways for the SHSM–Justice, Community Safety, and Emergency Services

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page JCSES-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- **Civics (compulsory):** This Grade 10 course enables students to explore what it means to be an informed, participating citizen in a democratic society. Students learn about the elements of democracy in local, national, and global contexts, about political reactions to social change, and about political decision-making processes in Canada.
- **Healthy Active Living Education:** These Grade 9 and 10 courses are recommended for all students who are considering enrolling in an SHSM–Justice, Community Safety, and Emergency Services program. The courses emphasize regular participation in a variety of physical activities that promote lifelong healthy active living.
- **Information and Communication Technology in Business:** Expectations in this Grade 9 or 10 course build a foundation of digital literacy skills that are needed in the work environments in this sector.
- **Introduction to Computer Studies (ICS2O) or Computer Technology (TEJ20):** These courses are recommended for any Grade 10 student who is considering enrolling in an SHSM–Justice, Community Safety, and Emergency Services program. They provide students with opportunities to explore the ICT sector, identify personal interests and aptitudes, and gain a better understanding of the computer skills and digital literacy required in this sector.

TOOLS AND RESOURCES



Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM—Justice, Community Safety, and Emergency Services by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Sector representatives emphasize the importance of computer skills and digital literacy – a knowledge of and comfort with the digital environment. Students should consider taking courses in communications technology and/or computer technology to build these skills.

Some experiential learning placements may require students to undergo a police check as a prerequisite for participation in the experience.

Entry tests for some of the careers in this sector require a high standard of physical fitness. Therefore, students who are interested in such careers are encouraged to take physical education courses to improve their physical condition and develop leadership skills.

Students are also encouraged to pursue additional courses in social sciences and the humanities or Canadian and world studies to be exposed to issues of group dynamics and conflict resolution. Knowledge and skill in these areas are critical for response and practice in the justice, community safety, and emergency services sector.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

Program Pathways: SHSM—Justice, Community Safety, and Emergency Services

This template shows program requirements for the SHSM—Justice, Community Safety, and Emergency Services in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM—Justice, Community Safety, and Emergency Services.

- Shaded boxes represent required credits in the bundle for the SHSM—Justice, Community Safety, and Emergency Services.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of three. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway <i>Specialization</i> Grades 11–12	College Pathway <i>Specialization</i> Grades 11–12	University Pathway <i>Specialization</i> Grades 11–12	Workplace Pathway <i>Specialization</i> Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
4 justice, community safety, and emergency services major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 justice, community safety, and emergency services major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 justice, community safety, and emergency services major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 justice, community safety, and emergency services major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Justice, Community Safety, and Emergency Services Sector

The following table provides examples of occupations in the justice, community safety, and emergency services sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.



Apprenticeship Training	College
This sector does not yet offer apprenticeship training opportunities.	- Air Traffic Controller 2272 - Court Recorder 1244 - Customs Officer 1228 - Firefighter 6262 - Forest Fire Officer 2223 - Police Officer 6261 - Security Manager 0114
University	Workplace
- Criminologist 4169 - Disaster Relief Services Coordinator 0414 - Intelligence Officer 0643 - Lawyer 4112 - Military Officer 0643 - Policy Advisor 4164 - Probation Officer 4155 - Youth Worker – Corrections 4155	- Animal Control Officer 6463 - Animal Services Worker 6483 - Bodyguard 6651 - Correctional Officer 6462 - Court Clerk 1443 - Court Services Officer 6461 - Emergency Centre Operations Officer 1211 - Emergency Services Dispatcher 1475 - Municipal Law Enforcement Officer 6463 - Private Investigator 6465 - Security Guard 6651 - Soldier 6464

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Justice, Community Safety, and Emergency Services Sector

The following are examples of programs and training related to careers in the justice, community safety, and emergency services sector and the accreditations associated with each.

Apprenticeship Training

This sector does not offer apprenticeship training opportunities.

College

911 Emergency and Call Centre Communications	Diploma
Aboriginal Law and Advocacy	Diploma
Applied Human Services – Police Studies	Diploma
Community and Justice Services (Correctional Worker)	Diploma
Corporate Security and Risk Management	Diploma
Customs Border Services	Diploma
Disaster Management	Diploma
Emergency Telecommunications	Diploma
Fire Fighter Education and Training	Diploma
Fire Protection Engineering Technician/Technologist	Diploma
Law and Security Administration	Diploma
Law Clerk	Diploma
Paralegal	Diploma
Police Foundations	Diploma
Police Studies	Diploma

University

Conflict Studies	Bachelor's degree
Emergency Management	Bachelor's degree
Forensics and Criminology	Bachelor's degree
Global Political Studies	Bachelor's degree
Human Resources and Labour Relations	Bachelor's degree
Human Rights	Bachelor's degree
Justice Studies	Bachelor's degree
Law	Bachelor's degree
Law, Crime, and Deviance	Bachelor's degree

Law, Policies, and Government	Bachelor's degree
Legal Studies	Bachelor's degree
Military Psychology and Leadership	Bachelor's degree
Native Human Rights	Bachelor's degree
Policing and Criminal Justice	Bachelor's degree
Political Science	Bachelor's degree
Politics	Bachelor's degree
Politics and Economics	Bachelor's degree
Social Justice and Equity Studies	Bachelor's degree
Social Policy	Bachelor's degree
Urban Studies	Bachelor's degree

Training for the Workplace

Crisis Management and Human Psychology	Certificate
Emergency Management	Certificate
Forensic Accounting and Fraud Investigation	Certificate
Fundamentals of Police Foundations	Certificate
Legal and Corporate Administration	Certificate
Military Arts and Science	Certificate
Municipal Administration	Certificate
Paralegal Foundations	Certificate
Pre-Service Firefighter Education and Training	Certificate
Public and Private Investigation	Certificate

Manufacturing

The SHSM in manufacturing provides students with a strong foundation for a wide variety of careers in the manufacturing sector, from those focusing on the service, repair, and modification of vehicles and vehicle systems to those related to the organization and management of manufacturing services and mass-transit systems.

TOOLS AND RESOURCES



For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the manufacturing sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Manufacturing

The SHSM–Manufacturing has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four manufacturing major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the manufacturing sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one of the following:
 - *for the apprenticeship training, college, and university pathways* – one in science (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
 - *for the workplace pathway* – an additional credit in English (Grade 12)
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA in each credit</i>	1	1	1	2 <i>One credit must be in Gr. 12</i>
Mathematics <i>including a CLA</i>	1	1	1	1
Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	not required
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in manufacturing requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.

Three (3) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three (3) electives from the list below			
basic electrical safety	Basic Safety Orientation (BSO Plus)	Canadian Welding Bureau (CWB) – flat	computer-aided design and computer-aided manufacturing (CAD/CAM)
confined space awareness	customer service	elevated work platforms	fire extinguisher use
fire safety training	handling dangerous substances	hoisting and rigging	introduction to Lean manufacturing
leadership skills	lockout/tagging	personal protective equipment – manufacturing	propane safety
safe lifting	sector-specific vehicle operation and safety	software	specialized skills training program/ competition (e.g., Skills Canada provincial level)
transportation of dangerous goods	Working at Heights		

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the manufacturing sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the manufacturing sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- a tour of a range of manufacturing enterprises

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.



- attendance at a manufacturing trade show, conference, or job fair
- attendance at demonstrations and hands-on activities presented by equipment vendors

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.

Pathways for the SHSM–Manufacturing

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page MAN-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentuccess/specialist.html for list of organizations and resources specific to this SHSM.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including manufacturing technology, by engaging in activities related to them.

- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Manufacturing Technology (TMJ2O): This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Manufacturing program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Manufacturing by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Manufacturing sector representatives have identified knowledge of entrepreneurship and basic business practices as important for students as they prepare for careers in this sector. Therefore, it is recommended that in Grade 11 or 12 students do one of the following:

- complete an entrepreneurship course offered in the Ontario business studies curriculum
- pursue an extracurricular activity focused on entrepreneurship (e.g., Junior Achievement’s Company Program)

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM—Manufacturing

This template shows program requirements for the SHSM—Manufacturing in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM—Manufacturing.

- Shaded boxes represent required credits in the bundle for the SHSM—Manufacturing.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway <i>Specialization</i> Grades 11–12	College Pathway <i>Specialization</i> Grades 11–12	University Pathway <i>Specialization</i> Grades 11–12	Workplace Pathway <i>Specialization</i> Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	2 English credits (C)* (One credit must be in Gr. 12.)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	not required
4 manufacturing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 manufacturing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 manufacturing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 manufacturing major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade. (For the workplace pathway, both English credits must include a CLA.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Manufacturing Sector

The following table provides examples of occupations in the manufacturing sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
• Die Designer 2232 • Electrician 7212 • Electrician, Plant Maintenance 7242 • Industrial Instrument Mechanic 2243 • Millwright – Industrial 7311 • Mould Maker 7231 • Precision Machinist 7231 • Precision Metal Fabricator 7263 • Roll Grinder/Turner 9511 • Tool and Cutter Grinder 9511 • Tool and Die Maker 7232 • Welder 7265 • Welder Fitter 7265	• Buyer 1225 • Chemical Production Engineering Technologist 2211 • Design and Drafting Technologist 2253 • Electronics Engineering Technologist and Technician 2241 • Industrial Engineering Technologist and Technician 2233 • Instrumentation and Control Technologist and Technician 2243 • Inventory Analyst 1474 • Manufacturing Technician/Technologist 2233 • Materials Supervisor/Material Control Manager 0114 • Mechanical Engineering Technologist 2232 • Photonics Technologist and Technician 2241 • Production and Quality Control Technologist 2233 • Stationary Engineer 7351 • Technical Sales Specialist 6221
University	Workplace
• Chemical Engineer 2134 • Electrical Engineer 2133 • Engineer, Computer Integrated Manufacturing 2141 • Industrial and Manufacturing Engineer 2141 • Mechanical Engineer 2132 • Metallurgical Engineer 2142 • Production Engineer 2141	• Foundry Worker 9412 • Inventory Clerk 1474 • Labourer, Material Handling 7452 • Machine Operator, Metal Machining 9511 • Motor Vehicle Assembler 9482 • Solderer 7265

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Manufacturing Sector

The following are examples of programs and training related to careers in the manufacturing sector and the accreditations associated with each.

Apprenticeship Training

Construction Boilermaker	Certificate of apprenticeship/ certificate of qualification
General Machinist	Certificate of apprenticeship/ certificate of qualification
Industrial Maintenance Mechanic	Certificate of apprenticeship/ certificate of qualification
Machine Tool Builder and Integrator	Certificate of apprenticeship/ certificate of qualification
Machinist	Certificate of apprenticeship/ certificate of qualification
Mechanical Millwright	Certificate of apprenticeship/ certificate of qualification
Millwright	Certificate of apprenticeship/ certificate of qualification
Mould Maker	Certificate of apprenticeship/ certificate of qualification
Precision Metal Fabricator	Certificate of apprenticeship/ certificate of qualification
Sheet Metal Worker	Certificate of apprenticeship/ certificate of qualification
Steamfitter	Certificate of apprenticeship/ certificate of qualification
Welder	Certificate of apprenticeship/ certificate of qualification

College

Industrial Engineering Technology – Management	Diploma
Industrial Management	Diploma
Integrated Manufacturing Systems	Diploma
Manufacturing Engineering Technology	Diploma
Manufacturing Management	Diploma
Mechanical CAD/CAM Technician – Automated Machining	Diploma
Mechanical Engineering Technician	Diploma

Mechanical Engineering Technology	Diploma
Mechanical Technician – Tool Making	Diploma
Process Automation	Bachelor's degree

University

Industrial Engineering	Bachelor's degree
Industrial Engineering – Automotive Manufacturing Systems Engineering	Bachelor's degree
Manufacturing Engineering	Bachelor's degree
Manufacturing Engineering and Management	Bachelor's degree
Mechanical Engineering – Manufacturing, Controls, Automation, and Robotics	Bachelor's degree

Training for the Workplace

Flux Cored Arc Welding (Manufacturing)	Certificate
Gas Metal Arc Welding (Manufacturing)	Certificate
Good Manufacturing Processes	Certificate
Manufacturing Techniques	Certificate
Manufacturing Techniques – Wood Products	Certificate
Mechanical Techniques – CNC/CAD/CAM Specialist	Certificate
Mechanical Techniques – Design	Certificate
Mechanical Techniques – Manufacturing	Certificate
Welder Operator Manufacturing	Certificate
Welding Techniques	Certificate

Mining

Canada is one of the largest mining countries in the world, producing more than 60 minerals and metals, and making mining a major player in Canada's economy. The SHSM–Mining enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace.

TOOLS AND RESOURCES

For local labour market opportunities in this sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the mining sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Mining

The SHSM–Mining has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four mining major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the mining sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in Canadian and world studies or science (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Canadian and World Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in mining requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!



See **Section A1.3** for more on SHSM certifications and training.

Four compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	General Safety Awareness (GSA)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three electives from the list below			
basic electrical safety	chainsaw safety	compass/map/global positioning system (GPS)	confined space awareness
customer service	elevated work platforms	environmental impacts	hoisting and rigging
leadership skills	lockout/tagging	personal protective equipment – mining	powder-actuated tools
radio operator	sector-specific vehicle operation and safety	surface and under-ground orientation	suspended access equipment
trenching safety	Working at Heights		

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the mining sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the mining sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- a field trip to an industry site
- attendance at a conference or symposium related to the mining sector
- participation in a Mine Rescue competition
- attendance at an orientation to engineering day at a university to promote careers in engineering

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Mining

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page MIN-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including mining technology, by engaging in activities related to them.
- Career Studies (compulsory) and the Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Transportation Technology or Technological Design: These courses are recommended for any Grade 10 student who is considering enrolling in an SHSM–Mining program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Mining by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Mining

This template shows program requirements for the SHSM–Mining in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Mining.

- Shaded boxes represent required credits in the bundle for the SHSM–Mining.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 Canadian and world studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 mining major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 mining major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 mining major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 mining major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Mining Sector

The following table provides examples of occupations in the mining sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!

See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
- Electrician 7242 - Heavy Duty Equipment Mechanic 7312 - Industrial Mechanic 2433 - Machinist 7231	- Geological Technician 2212 - Instrumentation Technician 2243 - Mechanical Engineering Technologist 2232 - Mine Development Technologist 2212 - Mining Technician 2212
University	Workplace
- Geologist 2113 - Mechanical Engineer 2132 - Mining Engineer 2143	- Cage Tender - Control and Process Operator 9231 - Crusher Operator - Geology Technical Assistant 2212 - Heavy Duty Equipment Operator 7421 - Mechanic's Helper 7612 - Mine Labourer 8614 - Sampler 9415 - Underground Mine Service and Support Workers 8411

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Mining Sector

The following are examples of programs and training related to careers in the mining sector and the accreditations associated with each.

Apprenticeship Training

Heavy Duty Equipment Mechanic

Certificate of apprenticeship/
certificate of qualification

Mechanic

Certificate of apprenticeship/
certificate of qualification

College

Electrical Engineering Technician – Industrial	Diploma
Mining and Environment – Regulations and Compliance	Bachelor's degree
Mining Engineering Technology	Advanced diploma
Mining Science and Management	Bachelor's degree

University

Earth Sciences – Geology	Bachelor's degree
Geological Engineering	Bachelor's degree
Geology	Bachelor's degree
Metallurgical Control Analyst	Bachelor's degree
Metallurgical Engineer	Bachelor's degree
Mining Engineering	Bachelor's degree

Training for the Workplace

Flux Cored Arc Welding	Certificate
Gas Metal Arc Welding	Certificate
Mechanical Techniques – CNC/CAD/CAM Specialist	Certificate
Mechanical Techniques – Design	Certificate
Mechanical Techniques – Mining	Certificate
Mining Techniques	Certificate
Welding Techniques	Certificate

Non-profit

The SHSM–Non-profit enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or a position in the workplace. Students will develop skills in the areas of problem solving, analysis, communication, cooperation, ethical values, consciousness, and citizenship. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on international development or community action. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the non-profit sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Non-profit

The SHSM–Non-profit has the following five required components:

FIND IT!

See [Section A1.2](#) for more on SHSM credits.

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four non-profit major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the non-profit sector. The three credits include:
 - one in English¹;
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in non-profit requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	ethical considerations	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three (3) electives from the list below			
behaviour management	communication skills	compass/map/global positioning system (GPS)	conflict resolution
customer service	environmental awareness	equity and inclusion	event coordination
fundraising	group dynamics	incident management	legal/administrative procedures
leadership skills	non-violent crisis intervention	personality inventory	problem solving
project management	proposal/grant writing	SafeTALK	self-defence
social media networking	software: desktop publishing	successful exhibiting	wilderness first aid

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the non-profit sector (an example of job twinning)
- a day-long observation of an employee in the non-profit sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the non-profit sector (an example of work experience)
- a volunteer experience with a non-profit organization or for a special event in the school or community
- organization of an awareness or fundraising initiative in the school or community
- attendance at a conference or a workshop presented by a non-profit organization

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See [Section A1.5](#) for more on reach ahead experiences.

5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See [Section A1.6](#) for more on Essential Skills and work habits.

Pathways for the SHSM–Non-profit

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page NPR-6.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Introduction to Business:** This Grade 9 or 10 course provides students with opportunities to explore a variety of business topics by engaging in activities related to them.
- **Information and Communication Technology in Business:** Expectations in this Grade 9 or 10 course build a foundation of digital literacy skills that are needed in the sector.
- **Communications Technology (TGJ20):** This course provides students with opportunities to gain a better understanding of the communication and media skills required in this sector.
- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- **Civics (compulsory):** This Grade 10 course enables students to explore what it means to be an informed, participating citizen in a democratic society. Students learn about the elements of democracy in local, national, and global contexts.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Non-profit by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.

Program Pathways: SHSM–Non-profit

This template shows program requirements for the SHSM–Non-profit in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Non-profit.

- Shaded boxes represent required credits in the bundle for the SHSM–Non-profit.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 non-profit major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 non-profit major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 non-profit major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 non-profit major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Non-profit Sector

The following table provides examples of occupations in the non-profit sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See [Section A1.6](#) for more on occupations and NOC codes.

Apprenticeship Training	College
Conference and Event Planner 1226	- Administrative Officer 1221 - Business Manager – Non-profit Organization 0114 - Fundraising Consultant 5124 - Rural Development Officer 4163
University	Workplace
- Community Social Development Officer 4164 - Public Affairs Officer 5124 - Social Policy Researcher Consultant and Program Officer 4164 - Social Services Planner/Researcher 4164	- Developmental Service Worker 4212 - Festival Organizer 1226 - Office Manager- Non-profit Organization 0114

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Non-profit Sector

The following are examples of programs and training related to careers in the non-profit sector and the accreditations associated with each.

Apprenticeship Training

Conference and Event Planner	Certificate of apprenticeship/ certificate of qualification
------------------------------	--

College

Community and Justice Services	Diploma
Event Management	Graduate certificate
Fundraising and Resource Management	Graduate certificate
Human Resources	Diploma
International Support Worker	Graduate certificate
Native Studies: Community and Social Development	Diploma

Peace and Conflict Studies	Diploma
Project Management	Graduate certificate
Public Relations	Diploma/graduate certificate
Special Events Planner	Diploma

University

Conflict Studies	Bachelor's degree
Economics – Development	Bachelor's degree
Environmental Ethics	Bachelor's degree
Ethics	Bachelor's degree
First Nation Studies	Bachelor's degree
Globalization Studies	Bachelor's degree
Humanities	Bachelor's degree
Indigenous Studies	Bachelor's degree
International Affairs	Bachelor's degree
International Development Studies	Bachelor's degree
International Studies	Bachelor's degree
Native Studies	Bachelor's degree
Natural Resource Management	Bachelor's degree
Peace and Conflict Studies	Bachelor's degree
Public Affairs	Bachelor's degree
Social Inequality	Bachelor's degree
Social Justice and Peace Studies	Bachelor's degree
Social Policy	Bachelor's degree
Sustainable Development	Bachelor's degree

Training for the Workplace

Coaching	Certificate
Customer Service	Certificate
Fundraising	Certificate
International Development	Certificate
Making Ethical Decisions	Certificate
Management/Leadership	Certificate
Public Speaking	Certificate

Sports

The SHSM–Sports enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace. Where local circumstances allow, boards may elect to offer one or more variants of the SHSM in a given sector, each with a particular area of focus. This SHSM may be designed to have a particular focus – for example, on competitive and recreational sports, sports management, or sports media and broadcasting. This focus is achieved through the selection of the four major credits in the bundle.

TOOLS AND RESOURCES

For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT

The requirements of this SHSM are unique and are geared to the sports sector. However, the design of all SHSM programs follows a consistent model, described in [Section A: Policy](#).

Required Components for the SHSM–Sports

The SHSM–Sports has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four sports major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the sports sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies or social sciences and humanities (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English including a CLA	1	1	1	1
Mathematics including a CLA	1	1	1	1
Business Studies or Science or Social Sciences and Humanities including a CLA <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Communications technology courses from the Ontario technological education curriculum may be taken as major credits for some SHSMs (e.g., those focused on media and broadcasting). In the technological education curriculum, multiple credits allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Six sector-recognized certifications and/or training courses/programs

The SHSM in sports requires students to complete six sector-recognized certifications and/or training courses/programs. Of these, three are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Three (3) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction	
Three (3) electives from the list below			
advanced training in a technique (e.g., fundamental skills in sport, fundamental movement skills, paddling technique, Spinning)	climbing techniques	coaching – performance	coaching – theory
communication skills	compass/map/global positioning system (GPS)	concussion awareness	conflict resolution
customer service	equity and inclusion	ergonomics	ethical considerations
event coordination	fitness	geographic information system (GIS)	group dynamics
health and safety – basic	HIGH FIVE	incident management	instructor certification
leadership skills	life-saving (Bronze Cross)	marine safety/marine first aid	officiating
personal training	Pleasure Craft Operator	risk management	software: sports application
sport nutrition	sport program design	sports team trainer certification	wilderness first aid
wilderness survival	working with individuals with disabilities	wrapping and taping for performance and injury	

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the sports sector (an example of job twinning)
- a day-long observation of an employee in the sports sector (an example of job shadowing)

FIND IT!

See [Section A1.4](#) for more on experiential learning and career exploration activities.

- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- a volunteer experience at a community sports facility or at a professional sports team event
- an experience coaching an elementary school student or team in an extracurricular activity
- participation in an exercise class at a fitness facility
- a tour of an athletic facility
- attendance at a sports sector career fair

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.



4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Sports

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page SPO-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- **Healthy Active Living Education:** These Grade 9 and 10 courses are recommended for all students who are considering enrolling in an SHSM–Sports program. The courses emphasize regular participation in a variety of physical activities that promote lifelong healthy active living.
- **Information and Communication Technology in Business:** Expectations in this Grade 9 or 10 course build a foundation of digital literacy skills that are needed in the media and broadcasting and the management areas of the sector.
- **Communications Technology (TGJ20):** This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Sports program with a focus on media and broadcasting. It provides students with opportunities to gain a better understanding of the communication and media skills required in this sector.
- **Career Studies (compulsory) and Discovering the Workplace:** Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Sports by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Sports

This template shows program requirements for the SHSM–Sports in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Sports.

- Shaded boxes represent required credits in the bundle for the SHSM–Sports.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science* or social sciences and humanities credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science* or social sciences and humanities (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science* or social sciences and humanities (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science* or social sciences and humanities (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 sports major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 sports major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 sports major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 sports major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Sports Sector

The following list provides examples of occupations in the sports sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See **Section A1.6** for more on occupations and NOC codes.

Apprenticeship Training	College
• Special Events Coordinator 1226	• Arena Manager 0721 • Broadcasting Sports Director 5131 • Broadcast Technician 5224 • Film or Video Camera Operator 5222 • Recreation Facility Manager 0721 • Recreation, Sports and Fitness Program and Service Director 0513 • Sports Agent 5124 • Sports Announcers and Broadcasters 5231 • Sports Photographer/Videographer 9474 • Sports Photojournalist 5221 • Technical and Coordinating Occupations in Sports Broadcasting 5226
University	Workplace
• Athletic Therapist 3144 • Health and Physical Education Teacher 4141 • Kinesiologist 4167 • Nutritionist 3132 • Recreation/Sport Consultant 4167 • Sports Author or Writer 5121 • Sports Journalist/Columnist 5123 • Sports Media Producer 5131 • Sports Psychologist 4151 • Sports Public Relations and Communications 5124	• Athlete 5251 • Coach 5252 • Fitness/Sports Instructor 5254 • Lifeguard 5254 • Operators and Attendants in Recreation and Sport 6671 • Outdoor Sport and Recreational Guide 6442 • Personal Trainer 5254 • Recreation/Sport Program Instructor 5254 • Sports Equipment Assembler and Inspector 9498 • Sports Officials and Referees 5253 • Sports Retailer 0621

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the **NOC website**. Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Sports Sector

The following are examples of programs and training related to careers in the sports sector and the accreditations associated with each.

Apprenticeship training

Special Event Coordinator	Certificate of apprenticeship/ certificate of qualification
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College

Advanced Television and Film	Advanced diploma
Applied Photography	Diploma
Broadcast Journalism – Television News	Diploma
Broadcasting – Radio	Diploma
Broadcasting – Television and Communications Media	Diploma
Communication, Culture, and Information Technology	Bachelor's degree
Fitness and Health Promotion	Diploma
Golf Management	Diploma
Physical Fitness Management	Diploma
Public Relations	Diploma
Recreation and Leisure Services	Diploma
Recreation Facility Management	Diploma
Recreation Therapy	Diploma
Sport and Event Marketing	Advanced diploma
Sport Conditioning	Diploma
Sport Management	Diploma
Sporting Goods Business	Diploma
Sports Administration	Diploma
Sports Business Management	Advanced diploma
Sports Journalism	Advanced diploma
Therapeutic Recreation	Advanced diploma

University

Applied Human Nutrition	Bachelor's degree
Athletic Therapy	Bachelor's degree
Biology	Bachelor's degree
Biomedical Engineering	Bachelor's degree

Biomedical Science	Bachelor's degree
Chemistry	Bachelor's degree
Communication Studies	Bachelor's degree
Health Promotion	Bachelor's degree
Human Kinetics	Bachelor's degree
Image Arts – Photography	Bachelor's degree
Journalism – New Media, Broadcast, Print	Bachelor's degree
Journalism – Print and Broadcast	Bachelor's degree
Kinesiology	Bachelor's degree
Radio and Television	Bachelor's degree
Recreation and Leisure Studies	Bachelor's degree
Sport Psychology	Bachelor's degree
Sports Administration	Bachelor's degree

Training for the Workplace

Coach	Certificate
Fitness/Personal Trainer	Certificate
Fitness/Sports Instructor	Certificate
Lifeguard	Certificate
Outdoor Adventure Skills	Certificate
Personal Trainer	Certificate
Recreation Therapist Assistant	Certificate
Referee	Certificate
Snow Resort Fundamentals	Certificate
Sports Official	Certificate

Transportation

The SHSM–Transportation provides students with a strong foundation for a wide variety of careers in the transportation sector, from those focusing on the service, repair, and modification of vehicles and vehicle systems to those related to the organization and management of transportation services and mass-transit systems. The SHSM–Transportation enables students to build a foundation of sector-focused knowledge and skills before graduating and entering apprenticeship training, college, university, or an entry-level position in the workplace.

TOOLS AND RESOURCES



For local labour market opportunities in the sector, see your local SHSM contact at the board office.

INSIGHT



The requirements of this SHSM are unique and are geared to the transportation sector. However, the design of all SHSM programs follows a consistent model, described in **Section A: Policy**.

Required Components for the SHSM–Transportation

The SHSM–Transportation has the following five required components:

1. A bundle of nine Grade 11 and Grade 12 credits

These credits make up the bundle:

- **four transportation major credits** that provide sector-specific knowledge and skills. The four courses must include at least one Grade 11 and one Grade 12 credit, and may include one cooperative education credit related to the sector. (This cooperative education credit would be additional to the two that are required in the bundle; see below);
- **three other required credits** from the Ontario curriculum, in each of which some expectations must be met through a contextualized learning activity (CLA) for the transportation sector. The three credits include:
 - one in English;¹
 - one in mathematics; and
 - one in science or business studies (or a cooperative education credit related to the sector, which would be additional to the two cooperative education credits required in the bundle; see below);
- **two cooperative education credits** that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply, and practise sector-specific knowledge and skills.

FIND IT!

See **Section A1.2** for more on SHSM credits.

1. Note that a compulsory English credit is required in Grade 11 and in Grade 12 for graduation with an OSSD. Schools may determine whether the CLA, required for the SHSM bundle of credits, is completed in the Grade 11 or Grade 12 English course.

Credits	Apprenticeship Training Grades 11–12	College Grades 11–12	University Grades 11–12	Workplace Grades 11–12
Major Credits <i>One credit may be substituted with a cooperative education credit (additional to the 2 required co-op credits)</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>	4 <i>Including at least one Gr. 11 and one Gr. 12 credit</i>
English <i>including a CLA</i>	1	1	1	1
Mathematics <i>including a CLA</i>	1	1	1	1
Business Studies or Science <i>including a CLA</i> <i>May be substituted with 1 cooperative education credit (additional to the 2 required co-op credits)</i>	1	1	1	1
Cooperative Education	2	2	2	2
Total number of credits	9	9	9	9

Note: Multiple credits in the Ontario technological education curriculum allow additional instructional time for the practice and refinement of skills needed to develop student performance to the levels required for certification, entry into apprenticeship programs, or participation in school–work transition programs (see *The Ontario Curriculum, Grades 11 and 12: Technological Education, 2009*, page 17).

2. Seven sector-recognized certifications and/or training courses/programs

The SHSM in transportation requires students to complete seven sector-recognized certifications and/or training courses/programs. Of these, four are compulsory and the remaining three are electives that must be chosen from the list in the following table. Note that items in the table that are capitalized are the proper names of specific certifications or training courses/programs that are appropriate for the SHSM. Items that are lowercased are names of the areas or categories within which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

FIND IT!

See [Section A1.3](#) for more on SHSM certifications and training.



Four (4) compulsory			
Cardiopulmonary Resuscitation (CPR) Level C – includes automated external defibrillation (AED)	health and safety – basic	Standard First Aid	Workplace Hazardous Materials Information System (WHMIS) – generic (i.e., not site-specific) instruction
Three (3) electives from the list below			
air brakes	all-terrain vehicle (ATV) safety	basic electrical safety	computer-aided design and computer-aided manufacturing (CAD/CAM)
customer service	Dare to Care – Vehicle Sales and Service	Drive Clean	environmental spills
ergonomics	filling propane and motor fuel tanks	fire extinguisher use	introduction to logistics
leadership skills	lockout/tagging	ozone depletion	Pleasure Craft Operator
sector-specific vehicle operation and safety	specialized skills training program/competition (e.g, Skills Canada provincial level)	vehicle lift safety	Working at Heights

3. Experiential learning and career exploration activities

Experiential learning and career exploration opportunities relevant to the sector might include the following:

- one-on-one observation of a cooperative education student at a placement in the transportation sector (an example of job twinning)
- a day-long observation of a skilled tradesperson in the transportation sector (an example of job shadowing)
- a one- or two-week work experience with a member of an industry association or a professional in the sector (an example of work experience)
- participation in a local, provincial, or national Skills Canada competition
- a tour of an automobile dealership, specialized transportation business, or municipal transportation department office and garage
- attendance at a transportation sector trade show, conference, or job fair

FIND IT!

See **Section A1.4** for more on experiential learning and career exploration activities.

POLICY

Note that volunteer activities in an SHSM cannot be counted towards the hours of community involvement required to earn the OSSD.

4. Reach ahead experiences

Students are provided one or more reach ahead experiences – opportunities to take the next steps along their chosen pathway – as shown in the following examples:

- Apprenticeship: visiting an approved apprenticeship delivery agent in the sector
- College: interviewing a college student enrolled in a sector-specific program
- University: observing a university class in a sector-related program
- Workplace: interviewing an employee in the sector

FIND IT!

See **Section A1.5** for more on reach ahead experiences.



5. Essential Skills and work habits and the Ontario Skills Passport (OSP)

Students will develop Essential Skills and work habits required in the sector and document them using the OSP, a component of the SHSM.

FIND IT!

See **Section A1.6** for more on Essential Skills and work habits.



Pathways for the SHSM–Transportation

A table illustrating the four pathways and required credits leading to completion of this SHSM is provided on page TRA-7.

Awareness building (Grades 7 and 8)

See **Section B3.4** for information on building awareness of SHSM programs among students in Grades 7 and 8.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/eng/teachers/studentssuccess/specialist.html for a list of organizations and resources specific to this SHSM.



Exploration (Grades 9 and 10)

See **Section B3.4** for information on providing Grade 9 and 10 students with opportunities for exploration of SHSM programs. In addition, students considering this SHSM can be encouraged to enrol in the following courses to become better informed about careers and postsecondary options in the sector:

- Exploring Technologies: This Grade 9 course is recommended for all students following SHSM pathways that have a technological education focus. The course provides students with opportunities to explore a variety of technologies, including transportation technology, by engaging in activities related to them.
- Career Studies (compulsory) and Discovering the Workplace: Some of the expectations in these Grade 10 courses provide opportunities for students to explore occupations and other postsecondary options in the sector and to participate in experiential learning activities.
- Transportation Technology: This course is recommended for any Grade 10 student who is considering enrolling in an SHSM–Transportation program.

Specialization (Grades 11 and 12)

Students acquire the sector-specific knowledge and technical skills required to earn their Ontario Secondary School Diploma (OSSD) with an SHSM–Transportation by completing its five required components. Students and their parents/guardians are encouraged to consult with guidance counsellors and teachers to select the courses that will enable students to pursue their goals.

Students pursuing an apprenticeship pathway should consider the Ontario Youth Apprenticeship Program (OYAP), which enables them to start an apprenticeship while earning their OSSD.

Students pursuing a university pathway are advised to complete their required cooperative education credits in Grade 11, in order to allow room in their timetables in Grade 12 for credits needed to meet university entrance requirements.

When helping students plan their SHSMs, particularly with respect to the selection of courses to fulfil the requirement for credits in the major, teachers should bear in mind that technological education courses can be offered as single-credit or multiple-credit courses.

Program Pathways: SHSM–Transportation

This template shows program requirements for the SHSM–Transportation in Grades 11 and 12, along with some of the additional credits needed for an OSSD. It is provided to help guide students in choosing the credits they need to meet the SHSM requirements in the pathway of their choice. Students should always review their pathways plan with their parents/guardians and their teachers to ensure that they have all the credits they need to graduate with an SHSM–Transportation.

- Shaded boxes represent required credits in the bundle for the SHSM–Transportation.
- (C) represents a compulsory credit for the OSSD.
- The SHSM bundle of credits *must* include two cooperative education credits, but *may* include a maximum of four. The possible options are noted below, and explained fully in Section A1.2 of this guide.

Apprenticeship Training Pathway Specialization Grades 11–12	College Pathway Specialization Grades 11–12	University Pathway Specialization Grades 11–12	Workplace Pathway Specialization Grades 11–12
1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)	1 English credit (C)* (in either Gr. 11 or Gr. 12)
1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)	1 math credit (C)* (in either Gr. 11 or Gr. 12)
1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>	1 business studies* or science credit* (in either Gr. 11 or Gr. 12) <i>A cooperative education credit related to the sector may be substituted.</i>
4 transportation major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 transportation major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 transportation major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>	4 transportation major credits (including a Gr. 11 and a Gr. 12 credit) <i>A cooperative education credit related to the sector may be substituted for one of these four credits.</i>
2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>	2 cooperative education credits related to the sector (in either Gr. 11 or Gr. 12)** <i>May be used as (C) credits</i>
2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)	2 optional or compulsory credits (Gr. 11)
2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)	2 optional or compulsory credits (Gr. 12)

* A contextualized learning activity (CLA) must be included in the course. (Note that students must take Grade 11 *and* Grade 12 English to graduate with an OSSD, but schools may choose to offer the CLA in either grade.)

** May be taken the summer before Grade 11

Note: To guide students and teachers in the development of their SHSM program, schools can access the latest approved SHSM course list for each sector through their SHSM board lead.

Occupations in the Transportation Sector

The following table provides examples of occupations in the transportation sector, with corresponding National Occupational Classification (NOC) codes, sorted according to the type of postsecondary education or training the occupations would normally require.

FIND IT!



See **Section A1.6** for more on occupations and NOC codes.

Apprenticeship Training	College
• Alignment and Brakes Technician 7321 • Auto Body Repairer 7322 • Automotive Painter – Motor Vehicle Repair 7322 • Automotive Service Technician 7321 • Marine Engine Mechanic 7311 • Motorcycle Technician 7334 • Parts Technician 1472 • Recreation Vehicle Service Technician 7383 • Small Engine Mechanic 7335 • Transmission Technician 7321 • Truck and Coach Technician 7321 • Truck and Transport Vehicle Mechanic 7321	• Air Pilot 2271 • Industrial Designer 2252 • Industrial Engineering Technician 2233 • Marine Engine Technician 7436 • Mechanical Engineering Technologist 2232 • Navigation Officer – Water Transport 2273 • Quality Control Assembly Inspector – Automotive/Marine Engines 9486 • Supervisors, Motor Transport, and Other Ground Transit Operators 7222
University	Workplace
• Aerospace Engineer 2146 • Automotive Engineer 2132 • Industrial Designer 2252 • Urban Planner 2153	• Aircraft Assembler and Aircraft Assembly Inspector 9481 • Airport Ramp Attendant 7437 • Automobile Salesperson 6421 • Automotive Mechanical Installers and Servicers 7443 • Boat Assembler and Inspector 9491 • Boat Operator 7436 • Bus Driver, Subway Operator, and Other Transit Operator 7412 • Car Lot Attendant 6683 • Delivery and Courier Service Drivers 7414 • Heavy Equipment Operators (except Crane) 7421 • Railway Track Maintenance Worker 7432 • Service Station Attendant 6621 • Tire Repairer 7443

Note: This information is based on the 2006 NOC. An update to the NOC in 2011 resulted in changes to the codes and titles for many occupations, and in some cases to the occupations included in the group. For more detail, refer to the [NOC website](#). Ontario Job Futures uses information based on the 2006 NOC. (Note also that some of the names of occupations listed here reflect common usage in the sector and may differ slightly from those used in the NOC system.)

Postsecondary Programs and Training in the Transportation Sector

The following are examples of programs and training related to careers in the transportation sector and the accreditations associated with each.

Apprenticeship Training

Alignment and Brakes Technician	Certificate of apprenticeship/ certificate of qualification
Auto Body Repairer	Certificate of apprenticeship/ certificate of qualification
Automotive Painter	Certificate of apprenticeship/ certificate of qualification
Automotive Service Technician	Certificate of apprenticeship/ certificate of qualification
Farm Equipment Mechanic	Certificate of apprenticeship/ certificate of qualification
Heavy Duty Equipment Technician	Certificate of apprenticeship/ certificate of qualification
Motorcycle Technician	Certificate of apprenticeship/ certificate of qualification
Parts Technician	Certificate of apprenticeship/ certificate of qualification
Recreation Vehicle Service Technician	Certificate of apprenticeship/ certificate of qualification
Tire, Wheel, and Rim Mechanic	Certificate of apprenticeship/ certificate of qualification
Transmission Technician	Certificate of apprenticeship/ certificate of qualification
Truck and Coach Technician	Certificate of apprenticeship/ certificate of qualification
Truck Trailer Service Technician	Certificate of apprenticeship/ certificate of qualification
Turf Equipment Technician	Certificate of apprenticeship/ certificate of qualification

College

Applied Business – Automotive Management	Bachelor's degree
Automobile Production Manager	Diploma
Industrial Designer	Diploma
Industrial Engineering Technician	Diploma

Marine Engine Mechanic	Diploma
Motive Power Technician	Diploma
Navigation Officer – Water Transport	Diploma
Quality Control Assembly Inspector – Automotive/Marine Engines	Diploma
Small Engine Mechanic	Diploma
Stationary Engineer and Auxiliary Equipment Operator	Diploma
Transportation Manager	Diploma

University

Aerospace Engineer	Bachelor's degree
Automotive Engineer	Bachelor's degree
Electrical Engineer	Bachelor's degree
Mechanical Engineer	Bachelor's degree

Training for the Workplace

Air Pilot	Certificate
Air Transport Ramp Attendant	Certificate
Aircraft Assembler and Aircraft Assembly Inspector	Certificate
Airline Sales and Service Agent	Certificate
Boat Assembler and Inspector	Certificate
Boat Operator	Certificate
Bus Driver, Subway Operator, and Other Transit Operator	Certificate
Railway Track Maintenance Worker	Certificate
Small Business Manager	Certificate
Tire and Rim Technician	Certificate

B. IMPLEMENTATION

B1.	Organization	B1-1
B2.	Planning	B2-1
B3.	School Considerations	B3-1
B4.	Program Evaluation	B4-1

B1. ORGANIZATION

The successful implementation of Specialist High Skills Major (SHSM) programs requires an organizational structure on which school boards and schools can rely, in both the short and the long term. The following section outlines the actions that school boards and schools need to take when implementing an SHSM program for their students.

B1.1	Establishing an SHSM Plan	B1-3
B1.2	Establishing SHSM Advisory Committees	B1-4
B1.3	Establishing a School SHSM Team	B1-5
B1.4	Developing a Strategic Plan	B1-7
B1.5	Building Supportive Partnerships	B1-8

BI.I Establishing an SHSM Plan

The development of an SHSM should be guided by a comprehensive plan that addresses all key aspects of the intended program, including the following:

PROGRAM PLANNING

- Selection of the SHSM program to be offered
- Program delivery model
- Required partnerships
- SHSM bundles of credits to be offered

PROGRAM IMPLEMENTATION

- School and student timetables
- Student enrolment
- Accommodations for students with special needs
- Tracking and recording of student progress
- Program marketing
- Sustaining the SHSM

PROGRAM EVALUATION

- Measuring and evaluating the SHSM program

Each of the key aspects is detailed in the following sections of this guide. A sample school SHSM Action Plan is also provided in [Section C: Resources](#).

BI.2 Establishing SHSM Advisory Committees

SHSM advisory committees provide important expertise and knowledge about employer and community expectations, and board and ministry priorities, as well as assistance in areas such as program content, resources, implementation strategies, and community outreach initiatives. Advisory committee members may also provide local labour market information and other relevant data. Typically, SHSM advisory committees are established at both the board and school levels, but this may vary in cases where geography is a factor.

The main task of the board advisory committee is to provide advice on the program to help ensure that students will earn an SHSM that stakeholders value. For example, industry members may provide advice about aligning students' classroom experience with current workplace expectations or may suggest a reliable service provider for sector certification and training courses.

The main task of the school advisory committee is to support and facilitate the implementation of the SHSM program and work closely with the school SHSM team.

The SHSM advisory committees established by boards and schools need to encourage the broadest range of participation by committee members. Face-to-face meetings as well as email, teleconference, or other electronic means may be used to reach committee members, where appropriate.

BI.3 Establishing a School SHSM Team

A school SHSM team, typically composed of key school and board staff, will be required during the implementation of the SHSM to oversee all aspects of program delivery, such as enrolment, timetabling, student tracking, and monitoring program success. The school SHSM team works closely with the advisory committee during the SHSM planning process and on an ongoing basis following the launch of the program.

Who should be on advisory committees and school teams?

People who have professional or technical expertise, excellent communication and organizational skills, and a strong sense of commitment may be most effective as members of advisory committees and school teams. The composition of these groups, however, depends largely on local circumstances and needs.

The board advisory committee or the school team may include the following:

- local employers
- representatives of colleges and universities
- members of training centres
- representatives of community agencies (e.g., cultural centres, business associations, chambers of commerce)
- regional sector-specific human resource council
- representatives of youth employment centres
- representatives of local business education councils
- union representatives
- superintendents of education
- Student Success leaders
- Student Success teachers
- members of the school board's programming team (e.g., cooperative education, technological education, and the Ontario Youth Apprenticeship Program (OYAP))
- representatives of band and Elders' councils
- school principals
- teachers of major credit courses and other required credit courses in the SHSM credit bundle
- cooperative education teachers
- guidance counsellors

- designated teachers of dual credit courses
- students
- parents and members of the school council
- board SHSM leads
- school administrators
- teachers of other required credit courses

BI.4 Developing a Strategic Plan

A strategic plan helps to ensure the quality of SHSM programs that school boards and schools offer. To be effective, the plan must define the objectives to be achieved, including program planning, implementation, and evaluation. Next, it must clearly describe the activities and the sequence in which they are to be completed. Finally, the plan must identify necessary resources and provide for the allocation and deployment of them to achieve the SHSM's objectives and provide a high-quality program that meets and adapts to the needs of the job market.

PROGRAM PLANNING OBJECTIVES

- Determine the composition of the advisory committee and the school team.
- Analyse the local market (e.g., needs, resources, and interests identified by the community) and students' interests.
- Establish necessary partnerships.

PROGRAM IMPLEMENTATION OBJECTIVES

- Create a meeting schedule for the advisory committee.
- Develop a long-term plan for implementation based on an analysis of the local market and students' interests.
- Determine the actions to be taken to ensure the five program components are delivered in accordance with ministry requirements.
- Identify the sectors to be given priority as well as program offerings and the schools capable of implementing the SHSM programs.

PROGRAM EVALUATION OBJECTIVES

- Determine the strategies to be used in evaluating the program to ensure that the SHSM is sustainable and continues to provide high-quality opportunities for students.
- Develop a plan to measure the program's success and to track students' progress.
- Develop a communication plan as well as marketing and advertising strategies.

BI.5 Building Supportive Partnerships

Partnerships between school boards and postsecondary institutions, the community, and business and industry sectors are crucial to the sustainability of the SHSM. Boards and schools need to concentrate their efforts on fostering partnerships that build on and strengthen existing community ties. It is strongly recommended that coterminous and neighbouring boards approach the implementation of SHSM programs as a joint venture, in order to maximize student opportunities. Such partnerships provide an effective strategy for working with economic sectors and community partners, and can reduce duplication and provide opportunities for taking advantage of economies of time and resources.

How can you partner effectively with other boards or schools?

Various partnership opportunities exist for boards to consider, ranging from delivering certifications and training courses/programs jointly to sharing students and resources in one SHSM. Areas in which partnership opportunities could be considered include:

- transportation and facilities costs
- process for certifications and training (e.g., sharing training providers)
- professional development of staff
- cooperative education placements (e.g., sharing databases)
- experiential learning opportunities (e.g., sharing facilities, staff, resources, transportation)
- sharing facilities and transportation
- reach ahead opportunities involving postsecondary institutions and community partners
- required equipment, maintenance, marketing, and consumables
- qualified staff, (e.g., bringing together students from different schools at a host school to follow major credit courses included in the bundle of required credits for the SHSM)
- synchronizing school timetables and reporting and transportation schedules
- board policies and procedures (e.g., field-trip permission forms)
- liability and health and safety issues
- development and delivery of CLAs
- registration of students (e.g., shared registers)

How can you partner effectively with colleges, training centres, and universities?

Strong partnerships with local colleges, training centres, and universities are critical to success in implementing an SHSM. It is advisable for partnering boards to approach colleges, training centres, and universities as a team rather than individually. Factors to be considered in partnerships with postsecondary educational institutions and training centres should include:

- geographical factors (e.g., location of institutions with programs related to the SHSM)
- existing agreements, including agreements for providing experiential learning and reach ahead activities, agreements for providing dual credits, and articulation agreements
- access to School-College-Work Initiative (SCWI) opportunities, including activities, forums, and dual credits
- capacity of the institution (e.g., availability of classroom seats in postsecondary programs)
- ability to provide support for students with Individual Education Plans (IEPs)

How can you partner effectively with business, industry, and the community?

Community and sector partners also play an important role in the success of SHSMs. Sector organizations have supported the development of SHSMs and have provided resources and opportunities for certification and training, experiential education, and cooperative education placements.

Many national, provincial, and regional organizations have offered to inform their local members of opportunities to partner with boards delivering the SHSM in their particular sector. Business education councils (BECs), training centres, and Employment Ontario are key resources for establishing and promoting community/business partnerships.

When identifying strategies to deliver the five required components of an SHSM, boards and schools are encouraged to:

- connect with the region's Economic Development office and the local BEC or local training board to determine employment trends and opportunities for cooperative education placements in the chosen sector
- collaborate with a wide range of community partners for the delivery of the SHSM components
- connect with sector councils and organizations, employer associations, and industry associations to determine how they can assist with the delivery of the certifications and training required for the SHSM
- partner with the neighbouring or coterminous board to achieve efficiencies and maximize SHSM offerings to students

TOOLS AND RESOURCES



Resources for each sector are available on the [ministry website](#).

B2. PLANNING

The best way for a school to ensure the quality of its SHSM program is through careful planning. Members of the school SHSM team must be familiar with the five program components and the requirements related to each sector so they can make informed decisions. The following section outlines the actions that school teams need to take when planning SHSMs.

B2.1	Selecting Which SHSM to Offer	B2-3
B2.2	Choosing a Delivery Model	B2-4
B2.3	Developing a School SHSM Action Plan	B2-6
B2.4	Establishing a Registration Process	B2-7

B2.1 Selecting Which SHSM to Offer

When considering which SHSMs to offer, school boards and schools need to determine how to build the capacity to provide a range of opportunities for students. Existing pathways programs may provide many of the components that students will need in an SHSM. Review of the local labour market also provides critical information when identifying a potential SHSM sector. Other factors to consider include:

- the degree of student interest
- the level of support at the board and the school
- the capacity within the economic sector and the community

FIND IT!



Selecting an SHSM will require a thorough understanding of both the general and sector-specific requirements of SHSM programs. **Section A: Policy** describes the course components and credit requirements common to all SHSM programs. **Section A3: Sectors** provides detailed information specific to each SHSM program.

What key criteria should be addressed?

In exploring SHSM program options, the strategic plan should take into consideration:

- available resources and facilities at the school and community levels
- community support
- current employment trends in the related sector in the region
- existing pathway programs with potential to expand to all four pathways
- labour market data
- opportunities for Aboriginal students
- opportunities for English language learners
- opportunities for reach ahead experiences
- opportunities for sector-specific cooperative education placements
- opportunities for sector-specific experiential learning and career exploration
- opportunities for students to complete required certifications and training programs
- opportunities for students with special needs
- partnerships with sector business/industry/community
- partnerships with college, university, and apprenticeship training centres
- partnerships with other schools and boards
- student enrolment/interest
- support by administration
- teacher expertise and willingness to champion the SHSM

B2.2 Choosing a Delivery Model

Once they have decided which SHSMs they will offer, school boards and schools need to consider a variety of delivery models and the resources required to support them.

What resources should be considered?

The availability of the following resources needs to be considered when selecting a delivery model for an SHSM:

- staff professional development and mentorship opportunities with business and industry, including support staff and supply teachers
- funding available for student transportation
- teachers' certifications as trainers and assessors of sector-recognized certifications and training courses identified in **Section A3: Sectors**
- students' certification and training
- supplies of consumables for the program
- hardware and software to meet program needs
- capital equipment and facilities
- existence of sustainable partnerships
- curriculum resources (e.g., CLAs)

INSIGHT

Resources to support the implementation of SHSMs may be available from a variety of existing sources, such as Student Success funding. Consideration should also be given to the availability of a variety of supports from the sector and the community.

What forms of delivery should be considered?

The following table highlights key considerations, advantages, and disadvantages of three common SHSM delivery models.

SHSM Delivery Models

Models	Considerations	Advantages	Disadvantages
SHSM offered at one school only to students in that school	• Teachers who champion the SHSM and provide sector expertise are critical to successful implementation	• Is easier to deliver, as all components are delivered at one site	• Challenges may arise if student interest is limited

Models	Considerations	Advantages	Disadvantages
	• Appropriate facilities are required • Arrangements must be in place for sufficient and appropriate experiential learning and career exploration placements • Partnerships should be in place with postsecondary institutions and local sector partners		
SHSM offered at one school to students from many schools The school offering the SHSM is the host school and delivers the major credits. The school sending students is the home school.	• Planning, cooperation, and communication are required between schools so that all components are delivered and tracked • The home school principal must ensure completion of all components not done at the home school (e.g., CLAs, cooperative education, certifications)	• Is appropriate when student enrolment is insufficient to sustain an SHSM at a school • Broadens program choices in many schools • Allows boards to implement program choices strategically • Enables cross-board participation, thereby expanding students' choices • Broadens cooperative education placements, as they are offered within several communities	• Generates transportation issues that need to be resolved • Affects enrolment in students' home schools • Requires that the host school consider staffing and facilities • Requires that the home school offer components not delivered in the host school • Requires coordination between the schools to track completion of components and generation of SHSM Records. SHSM "identity" is not as strong in the home school as in the host school
SHSMs delivered in part at learning sites other than a secondary school (e.g., SHSMs involving dual credits or for which some or all of the requirements are delivered on-site – for instance, on a house build)	• Partnerships within the community are critical	• May provide reach ahead experiences for students • Is available for students from several boards in the region • May offer facilities and equipment that are not available in schools • May provide opportunities for team teaching	• Generates transportation issues

B2.3 Developing a School Action Plan

The SHSM Action Plan is a continually evolving document that drives the implementation and success of the SHSM. Prior to completing the action plan, the school SHSM team needs to consider strengths that can be built upon and gaps that must be addressed when offering the program. This information becomes the basis of the action plan, which includes planning for implementation (e.g., strategies, activities, responsibilities, schedules, and budgets) as well as for measuring the success of the SHSM program.

TOOLS AND RESOURCES

See Part B of **Section C: Resources** for:

- a sample school SHSM action plan
- an implementation checklist for school principals

Once the school SHSM advisory team has completed the SHSM Action Plan, it should be updated and reviewed by the team to assess the progress of the program. This review process should occur a minimum of twice yearly, at mid-year (February) and at the end of the year (June). The school principal may use the checklist for principals to complete his or her own review of the activities and tasks to consider for implementation.

B2.4 Establishing a Registration Process

The SHSM program is a pathways program for Grade 11 and 12 students. All students within a board or school are eligible for an SHSM program. Boards and schools may consider developing a registration process in which acceptance is based on the student's career goals and on how well the program aligns with the student's interests and postsecondary plans.

The student selection process needs to take the following factors into account:

- student readiness based on:
 - the student's awareness and interest in the SHSM
 - the student's career and postsecondary goals
 - the parents' awareness and approval of the SHSM
 - recommendations from the student's teachers and guidance counsellors
 - the student's résumé, application letter, and interview
- the capacity of existing facilities to offer the SHSM
- the extent to which enrolment reflects a balanced representation of:
 - programs offered for all four pathways
 - male and female students
 - participants from each school, if the program is offered across a region
 - participants from each board, if the program is coterminous

Many students, whose postsecondary goals and interests are compatible with the SHSM, register for the SHSM when they enter Grade 11. This allows them to meet all the requirements of the SHSM within two years. However, some students who already have acquired recognized credits, certifications, training, and learning experiences that count toward the required components of an SHSM may register for the SHSM in Grade 12 and fulfil the requirements of the SHSM program within one year.

It is important that the school recognize all components completed by students prior to officially registering for the SHSM program, including those completed in Grades 9 and 10. The same requirements apply to all students; therefore, students who register for the SHSM program in Grade 12 may be required to complete certain Grade 11 SHSM components such as contextualized learning activities in French and mathematics.

**POLICY**

A student may complete some of the components of an SHSM before enrolling in or starting the SHSM. However, these components (e.g., a certification) would not be recorded until the student enters the SHSM in his or her senior years and must not expire before the student graduates.

Grade 9 and 10 students should be made aware of the SHSM to ensure appropriate course selection in Grades 11 and 12. **Section B3.4** provides more information about building awareness of the SHSM.

B3. SCHOOL CONSIDERATIONS

For an SHSM to be successful, members of the school team, with the support of the school board, need to carefully consider the educational, material, and human resources available for the implementation of the program. They also need to take into account the local context in which the program will be offered. The needs and activities identified in the school's action plan should guide the team's decisions in the areas outlined in the following section.

B3.1	Developing SHSM Pathways	B3-3
B3.2	Timetabling the SHSM	B3-5
B3.3	Adapting the SHSM for Students with Special Education Needs	B3-6
B3.4	Promoting and Developing the SHSM	B3-8
B3.5	Keeping Track of Students' Completion of the SHSM Requirements	B3-10
B3.6	Sustaining and Growing the SHSM	B3-11

B3.1 Developing SHSM Pathways

When establishing the program pathways for your SHSM, consider the following:

- all stakeholders, including students, parents, staff, and community and postsecondary partners
- offering choices in the bundle of credits
- alternative forms of course delivery (e.g., e-learning, independent study)
- partnering with coterminous and neighbouring boards
- incorporating dual credits, approved interdisciplinary courses (IDCs), and approved LDCs, where appropriate
- flexible and innovative timetabling (e.g., continuous intake cooperative education, after-hours cooperative education, block scheduling, early starts, extended days)

A pathways chart is not a student timetable but rather suggested courses that, taken as a bundle, will provide sector-specific knowledge and skills. When developing a personalized timetable based on the pathways chart, students may choose to select courses from multiple pathways (e.g., a student may be planning to enter the workplace upon graduation but takes Grade 11 English, College [ENG3C] rather than Grade 11 English, Workplace [ENG3E]).

SUCCESSFUL PRACTICE



When students look at a pathways chart, they should be able to easily identify the courses they can take to earn the SHSM in each pathway, through the appropriate course codes in the bundle of credits:

- Apprenticeship training: "E" and "C" course codes
- College: "C" and "M" course codes
- University: "U" and "M" course codes
- Workplace: "E" course codes
- "O" (Open) course codes, which may also be included where appropriate

Students can customize their timetables by taking courses in any pathway as they work towards completion of the SHSM.

POLICY



Schools must offer an SHSM in all four pathways: apprenticeship training, colleges, university, and workplace.

The terminology used in describing SHSMs includes *pathway*, *timetable*, and *bundle of credits*. The distinctions between these terms are important and are summarized in the table below.

A Comparison of Pathways, Timetables, and SHSM Credit Bundles

Pathway	Timetable	Credits in the SHSM Bundle
The roadmap, showing courses offered in a school, that leads to postsecondary opportunities. The groupings of courses from Grade 9 to 12 constitute a pathway that leads to a specific postsecondary destination.	The student's selection of courses for a semester or a year that lead to the achievement of credits for graduation. The student can select courses and personalize his or her timetable on the basis of his or her needs, abilities, and interests.	The eight to 10 courses specific to a sector that must be approved by the ministry. These are derived from sector, postsecondary, and teacher input.

In developing pathways for the SHSM, you should be mindful of the following:

- Students need a clear map that shows how the credits in the bundle provide them with the pathway to a future career.
- When selecting courses for the SHSM pathways, special attention must be paid to the strategic bundling of credits to ensure that the combination of major credits in the pathway delivers the technical knowledge and skills expected in an SHSM.
- Each student must see the kinds of courses that he or she needs in a pathways chart, whether the student's plan is to go into apprenticeship training, to a college or university, or directly to the workplace.
- Courses must be offered in all four pathways.

A generic pathways chart is provided for reference for each sector in **Section A.3: Sectors**.

B3.2 Timetabling the SHSM

The following factors need to be considered when timetabling an SHSM:

- staff expertise in the sector
- program priorities and a rollout plan for SHSM programs in the board/schools
- effect on other programs in the board/school
- availability of specialized equipment and facilities
- timetable options:
 - block-scheduling students as cohorts
 - scheduling single, double, or triple sections for eligible major credits
 - timetabling to accommodate cooperative education courses and prerequisites for required bundle of credits
 - grouping students in the other required credits (e.g., English) to facilitate the delivery of CLAs
 - in smaller schools, offering credits in alternating years or scheduling two or three courses in the same timetable slot
- delivery format of courses in the SHSM (e.g., regular day-school courses, dual credits, e-learning, and Independent Learning Centre [ILC] courses)
- busing schedules
- costs of travel, taking into account the distance to the SHSM site
- use of innovative strategies (e.g., summer cooperative education programs)
- coordination with a college partner offering dual credits as part of the SHSM

B3.3 Adapting the SHSM for Students with Special Education Needs

In designing SHSM programs for a student with special education needs, school SHSM teams should consider the student's abilities, interests, personal goals, strengths, and needs, including the need for educational, environmental, or assessment accommodations and/or modifications to curriculum expectations, as outlined in the student's Individual Education Plan (IEP).

For some students, accommodations are sufficient to allow them to participate in courses and learning activities through experiences in the community and to demonstrate their learning without modifying expectations. Accommodations can include assessment methods such as access to assistive technologies and support staff, or the opportunity to take more frequent breaks.

Experiential learning activities in the community should also be considered when developing the transition plan included in the IEP. This will be required for any student aged 14 or older with special education needs.

When planning the SHSM learning experiences outside the classroom (i.e., experiential learning and career exploration, reach ahead experiences, and cooperative education placements) for students with special education needs, educators must take the following into account:

- The accommodations described in a student's IEP must be made available in every experience, whether it is job shadowing, job twinning, work experience, cooperative education, or an apprenticeship training program.
- The employer and the supervisor must be made aware of the student's special education needs and, if possible, this should occur well before the placement begins.
- The teacher, the student, and the placement supervisor should discuss the expectations that are to be achieved.
- The student should be well prepared for what he or she will be expected to do at the placement (e.g., specific work tasks and use of specialized tools and procedures may be modelled at the school before the work placement).
- Strategies employed in both teaching and placement supervision should be tailored to meet the particular strengths and needs of students with special education needs (e.g., the school may provide employers with strategies relevant to training and making accommodations for students with special education needs).

- Schools should ensure that additional supports and resources are provided, where necessary.
- The assistance of additional professional or paraprofessional staff and the use of specialized equipment or facilities may be required (e.g., an educational assistant may accompany the student to the site to facilitate the transition to the workplace, and/or students may use assistive technologies).

TOOLS AND RESOURCES



More detailed information about planning programs for students with special education needs can be found on the ministry website:

- *The Individual Education Plan (IEP), A Resource Guide, 2004*
www.edu.gov.on.ca/eng/general/elemsec/speced/guide/resource/index.html
- *Individual Education Plans: Standards for Development, Program Planning, and Implementation, 2000*
www.edu.gov.on.ca/eng/general/elemsec/speced/iep/iep.html

B3.4 Promoting and Developing the SHSM

Specific activities related to the promotion and marketing of the SHSM should be identified in discussions with the school SHSM team and advisory committee and incorporated into the SHSM action plan. Boards might want to consider a centralized approach to SHSM promotion through flyers, posters, radio and television commercials, and SHSM branding on clothing, uniforms, hats, and accessories.

How can you build awareness among students, parents, and key stakeholders?

Students, parents, and key stakeholders, including postsecondary institutions, sector partners, and sector-related businesses in the community, need to be informed and involved through a variety of strategies, which could include:

- featuring articles on the SHSM(s) in the school newsletter
- discussing the SHSM(s) at school council meetings
- communicating with local business and industry and the local chamber of commerce
- posting information on board or school websites
- referring stakeholders to Ontario Youth Apprenticeship Program (OYAP) websites
- using social media to inform students of opportunities offered in SHSM programs
- making SHSM promotional materials available in guidance/student services offices
- ensuring that SHSM programs are discussed with students during option selection
- holding career information events for parents, students, teachers, and the community
- leveraging existing open house events to promote the SHSM
- coordinating awareness and promotional activities with School College Work Initiatives (SCWIs) (e.g., dual credit links in the SHSM) at the local level
- sharing with students, parents, and staff economic and employment trend data, available on the **Employment and Social Development Canada (ESDC) website** (formerly Human Resources and Skills Development Canada [HRSDC]) or from local Economic Development offices

How can you promote awareness among Grade 7 and 8 students?

Schools need to provide parents or guardians as well as students with information about SHSM programs. In Grades 7 and 8, students and parents start considering programs offered at the secondary level, secondary school options, and requirements for achieving an Ontario Secondary School Diploma. Students' decisions depend largely on parental awareness of SHSM programs. Promotional materials and activities that raise awareness of SHSM programs and highlight the links between programs and particular interests provide helpful information about the benefits of SHSM programs.

The following are examples of strategies that boards and schools can use to build Grade 7 and 8 students' awareness of the SHSM program:

- Organize field trips, skills competitions, and activities in the community that are specific to the SHSM.
- Host presentations or talks on careers by guest speakers and mentors from the sector.
- Hold a sector-sponsored summer program before students enter secondary school.
- Organize experiences at a secondary school in the program related to this sector.
- Invite current or graduate SHSM students to share their experiences.
- Profile SHSMs at Grade 8 parent nights.
- Arrange for students to attend skills competitions in local high schools.

How can you encourage exploration of SHSMs among Grade 9 and 10 students?

Many of the strategies listed above would also help Grade 9 and 10 students begin to explore pathways planning and SHSM programs. Schools should be infusing career education into all courses, and those schools with SHSMs should ensure that the SHSM sector(s) are explored in the Grade 10 Career Studies course. These are some additional strategies:

- The school board SHSM lead could be invited to present information about the SHSM programs offered at the board's schools.
- SHSM programs could be profiled on the school and/or board websites.
- Displays could be set up for parent nights at the school to inform parents about the benefits of SHSM programs.
- Activities such as *Take Our Kids to Work Day*® also provide opportunities for students to explore careers in sectors that interest them.
- SHSM presentations could be delivered as students begin to select their courses for the following year.

Many courses for Grade 9 and 10 students provide excellent exploration opportunities. See **Section A3: Sectors** for details on the exploration courses recommended for each SHSM program.

FIND IT!

The descriptions of individual SHSM programs in **Section A3: Sectors** include recommended courses that support Grade 9 and 10 students' exploration of the SHSM.



B3.5 Keeping Track of Students' Completion of the SHSM Requirements

The following SHSM components must be tracked:

- certifications by date and number of hours
- reach ahead and experiential learning and career exploration activities
- development of Essential Skills and work habits documented in the OSP
- CLA delivery dates

Step 1.

A process is established to identify students who will participate in the SHSM. These students are then identified in the school's student management system. Student names are then recorded in the board's student management system, which is designed to record the completion of the five required components of the SHSM, including completion dates.

Step 2.

Staff access the credit counselling summary sheets or any other board-generated reports of SHSM students and meet with them. The required components that these students have already achieved are identified.

Step 3.

Data is entered into the student management system based on the information recorded on the board's student management system.

Step 4

Throughout each semester, the student's SHSM information is updated to reflect new credit accumulations and the completion of SHSM components. In the case of a student who has attended the school only to obtain the major credits, the home school is updated by receiving a copy of the student's SHSM information.

Step 5

The student's SHSM information recorded on the board's student management system should be reviewed a minimum of twice a semester to check on students' progress in certifications, and experiential learning and career exploration activities.

B3.6 Sustaining and Growing the SHSM

Professional learning communities (PLCs) are an effective means to facilitate the involvement of all staff in the planning, implementation, and measurement of an SHSM initiative, and help create a sense of collective responsibility. As the program evolves, staff members build individual knowledge and skills, and simultaneously develop a sense of working as a team towards a common goal – to provide a quality SHSM for students. The work of a PLC can result in a program that is both sensitive to local and individual needs and designed to meet the ministry's requirements.

A PLC can include administrators, Student Success leaders, teachers of SHSM major credits, guidance staff, cooperative education staff, teachers of subjects related to the SHSM, and MISA (Managing Information for Student Achievement) leads.

Networking groups also provide sharing opportunities among educators across the province who face similar challenges. These groups may be at the regional level or the provincial level, and may include teachers in other schools and boards offering the same SHSM sector. The Ontario SHSM e-Community website, listed in the box below, is an example of an electronic community.

SUCCESSFUL PRACTICE



An SHSM team is essential for the success and sustainability of an SHSM program. Local, regional, and provincial networks can be strengthened by:

- sharing effective practices and analysis of data and program success by SHSM teams
- working collaboratively with neighbouring boards
- accessing the SHSM e-Community at www.elearningontario.ca, to obtain and submit resources, and join threaded discussions with other SHSM teams
- visiting other SHSM sites, industry sites, and postsecondary programs related to the SHSM
- attending sector-related conferences and events
- inviting community, industry, and/or business partners to school events

B4. PROGRAM EVALUATION

B4.1 Measuring Program Success

B4-3

B4.1 Measuring Program Success

SHSM programs are designed to provide students with sector-recognized knowledge and skills that will contribute to their success in the workplace or in the postsecondary education or training program of their choice. To ensure that SHSM programs meet this mandate, they need to be evaluated and refined regularly.

INSIGHT

It is important to recognize that a student who decides not to continue in a particular SHSM and a student who decides to remain in an SHSM may both represent positive outcomes, because both decisions reflect informed choices.

The evaluation process requires the collection and analysis of various types of information. For example, analysis of data related to student attitudes, experiences, and insights provides information on whether the SHSM program engages students. Information obtained by such means as a student survey at the end of each semester, along with ministry data collected from reports and external evaluations, can assist schools in assessing their programs and targeting resources for future success and program growth. Tracking student credit accumulation and enrolment and retention data indicates how much the SHSM is contributing to students' successful completion of secondary school.

Indicators useful in measuring and tracking the success of the SHSM may include:

- student engagement, as measured by student absences and lateness, and teacher observations
- credit accumulation, including credits attempted and credits achieved
- responses to student, parent, teacher, and employer surveys
- enrolment, including both numbers and demographics, such as students with Individualized Education Plans (IEPs), English language learners, and Aboriginal students
- the rate of retention of students in the SHSM
- the school's SHSM completion rate compared to the completion rate of other SHSM programs in the board or the province
- recognition of the value of the SHSM, as expressed by stakeholders, students, and parents
- involvement of partners within the community and the economic sector
- testimonials from stakeholders, parents, and students
- survey of graduates several months after graduation
- the percentage of students who earn the SHSM seal on their secondary school diploma
- the number and diversity of available experiential learning, career exploration, and reach ahead activities
- the number of available cooperative education placements

Ongoing evaluation of the program design will help the school team identify ways to improve the SHSM and respond to economic changes in the SHSM sector. Employment trends and labour market data will need to be assessed to ensure that programs continue to be vital to the community in which they are offered. Stakeholders involved with the SHSM program should also be consulted in this evaluation process.

C. RESOURCES

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C. RESOURCES

Overview	C-3
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OVERVIEW

Section C includes tools, resources, and additional information to support the SHSM in the areas of:

- Policy (Part A), and
- Implementation (Part B)

Collections of additional resources, including electronic resources, are available on the ministry website, the Ontario Educational Resource Bank (OERB) website, and the SHSM e-Community site. Among these resources are supplementary tools and information relating to SHSM programs in each sector.

FIND IT!

**SHSM:**

<http://www.edu.gov.on.ca/eng/teachers/studentsuccess/specialist.html>

OERB:

<http://resources.elearningontario.ca>

SHSM e-Community:

<http://community.elearningontario.ca>

C.I Template: Contextualized Learning Activities (CLAs)

For the “other required credits” in the bundle of credits, students in an SHSM program must complete learning activities that are contextualized to the knowledge and skills relevant to the particular SHSM sector. CLAs, which must be a minimum of six hours and a maximum of ten hours in length, address curriculum expectations in these courses in the context of the sector.

Teachers across the province can access a wide variety of CLAs that have been posted on the Ontario Educational Resource Bank (OERB) website, at <http://resources.elearningontario.ca>, as well as on the SHSM e-Community website, a password-protected site for educators, at <http://community.elearningontario.ca>. If you have a CLA that you would like to share with colleagues across Ontario, you are invited to submit it to the ministry, at SSL18.StrategicPolicy@ontario.ca, for review and posting.

The following template must be used for a CLA that is being submitted for posting. Instructions are given in square brackets in the template to assist you.

Before starting, teachers who wish to submit a CLA are encouraged to familiarize themselves with the resource guide entitled *How to Plan and Write Contextualized Learning Activities (CLAs)*, available on the [SHSM e-Community website](#).

In addition, when preparing a CLA for posting, it is important to do the following:

- Submit all material in a **single** Microsoft Word file (not as a PDF). **Please note: No attachments will be accepted** (with the exception of multimedia presentations that are included as part of the CLA). Where attachments are mentioned in the template, they are to be included within the single Word file.
- Observe **all** copyright regulations (see *Access Copyright – The Canadian Copyright Licensing Agency* at www.accesscopyright.ca).
- Complete all sections of the template.
- In the section **Key Search Terms**, supply 4 key search words that will enable others to search and locate this CLA in an electronic database. As noted in the template instructions, the key search words you supply should not include the course code or the SHSM sector, which are default key words. Here is an example of useful key words for a CLA in mathematics for a manufacturing SHSM:

Key Search Terms	geometry, manufacturing, conversions, calculations
-------------------------	--

- When saving the CLA, use the following document-naming format:
Sector–Course Code–Title (max. 250 characters for the title); for example:
 H&T–SCH3U–MoleCookieLab.doc

Note to CLA Developers: For your convenience, instructions (enclosed in square brackets) have been provided throughout this template. Remove these instructions when you complete the template.

Contact Information	
Board	
Development date	
Contact person	
Position	
Phone	() -
Email	
SHSM sector	
Course code and course title	
Name of CLA	
Brief description of CLA	
Key Search Terms	<i>[Max. 4 words. Do not use SHSM, CLA, the course code, or the sector – these are default search terms.]</i>
Duration	<i>[The CLA must take a minimum of 6 hours and a maximum of 10 hours to complete.]</i>
Overall expectations	<i>[Identify the overall expectation(s) from the Ontario curriculum to be assessed or evaluated through the CLA. Include relevant strand titles and expectation numbers.]</i>

Specific expectations	<i>[Identify the specific expectations related to the above overall expectations that will be addressed in the instructional and assessment strategies. Include relevant strand titles. No expectation numbers are required.]</i> <i>[Consider the following as part of your planning: What do we want students to learn?</i> • <i>What specific/key learning goals for students are related to these expectations?</i> • <i>Are these specific/key learning goals arranged in a way that will allow students to achieve the desired learning incrementally?</i>
Catholic graduate expectations (if applicable)	
Essential Skills and work habits	<i>[Check off the Essential Skills and work habits that are addressed in this CLA.]</i> Essential Skills ☐ Reading Text ☐ Writing ☐ Document Use ☐ Computer Use ☐ Oral Communication Numeracy ☐ Money Math ☐ Scheduling or Budgeting and Accounting ☐ Measurement and Calculation ☐ Data Analysis ☐ Numerical Estimation Thinking Skills ☐ Job Task Planning and Organizing ☐ Decision Making ☐ Problem Solving ☐ Finding Information ☐ Critical Thinking Work Habits ☐ Working Safely ☐ Teamwork ☐ Reliability ☐ Organization ☐ Working Independently ☐ Initiative ☐ Self-advocacy ☐ Customer Service ☐ Entrepreneurship

Instructional/Assessment Strategies

Teacher's notes

[Provide suggestions that will assist the teacher in delivering the CLA. For example, remind teachers to make sure that handouts, such as authentic workplace materials/documents used by the sector, are available for the CLA.]

Context

[Describe the workplace context for the CLA.]

Strategies

[In point form, describe the sequence of instructional and assessment strategies that will support the intended learning. Attach all student handouts and worksheets.]

[How will the learning be designed?

- *Do the instructional and assessment strategies support the achievement of the learning goals?*
- *Are the assessment strategies linked to each of the instructional strategies in a planned, purposeful, and systematic way?*
- *Do the assessment and instructional strategies provide feedback and ongoing monitoring of students throughout the CLA?*
- *How will teachers differentiate instruction and assessment to meet the learning needs of students?]*

[What adjustments must be made to the instructional and assessment strategies for those students who are not progressing?]

Assessment and Evaluation of Student Achievement

[List all assessment and evaluation strategies and tasks and include handouts, tests, assignments, exercises, etc.]

[As you plan, keep the following important considerations in mind:]

<i>How will we know students are learning?</i>	<i>How will we know students have learned?</i>
• <i>How will students demonstrate progress towards the desired learning?</i>	• <i>How will students demonstrate achievement of the desired learning?</i>
• <i>What criteria will be used to determine whether students are learning?</i>	• <i>What criteria will be used to determine that students have learned?</i>
• <i>What assessment strategies/tools will best gather evidence during learning?</i>	• <i>What assessment strategies/tools will best gather evidence that students have learned?</i>
• <i>Will the assessment tasks provide opportunities for students to demonstrate the full range of their learning in a variety of ways?</i>	

Strategies/Tasks <i>[Add rows as required.]</i>	Purpose <i>[Assessment for, as, and of learning]</i>
1.	
2.	
3.	
4.	

Assessment tools
[List all tools used and include checklists, rubrics, correction keys, etc.]

Differentiation
Differentiation will be based on:

Readiness ☐ Learner Profile ☐ Interest ☐

Differentiation will be achieved through:

Content ☐ Process ☐ Product ☐ Learning Environment ☐

Additional Notes/Comments/Explanations <i>[Provide additional suggestions for teachers that will help them deliver the CLA.]</i>
Resources <i>[List all the resources needed to support the implementation of the CLA.]</i>
Authentic workplace materials <i>[e.g., blueprints, workplace manuals, specification sheets, spreadsheets]</i>
Human resources
Print resources
Video resources
Software

Websites

Other resources

Accommodations

[List instructional, environmental, and assessment accommodations.]

[What adjustments must be made to the instructional and assessment strategies to accommodate different learning needs?]

List of Attachments

[List all related materials (e.g., student worksheets, tests, rubrics) included in the Word file as attachments to the CLA.]

C.2 *Template: Rubric for Exemplary Contextualized Learning Activities (CLAs)*

As you review your CLA, apply the criteria in this rubric to indicate that the CLA delivers each of the criteria to a high degree (4, on a scale of 1 to 4) or to a lesser degree (1 to 3, on the scale of 1 to 4). A response below 4 might suggest that a revision is necessary.

	CLA Criteria	4	3	2	1	Revise
Overall	- contextualizes the SHSM sector within the expectations of the course - takes between 6 and 10 hours of class time - bundles the pertinent specific expectations to meet the overall expectations - takes into account students' multiple intelligences and learning styles - provides activities that are logical and sequential - includes handouts in student-friendly language - addresses accommodations for students with IEPs - provides assessment "for" and "as" learning to identify the students' starting points and to provide students with relevant and timely feedback - includes an authentic culminating task that encapsulates the overall expectations					
Knowledge/ Understanding	- provides authentic learning experiences - scaffolds content and strategies through carefully planned lessons - contains embedded differentiation of content, process, and product					

	CLA Criteria	4	3	2	1	Revise
Thinking	• provides scaffolded, and easy-to-follow activities • promotes critical thinking skills					
Communication	• ensures that the students' key learning goals are clear and authentic • provides opportunity for students to reflect on how the learning experience enhanced their knowledge and understanding of their sector					
Application	• provides sector-specific resources • makes connections between new and familiar contexts					

C.3 Checklist: Responsibilities of Board SHSM Leads and School Teams

The board SHSM lead and the school team are responsible for implementing a high-quality SHSM program. Their collaboration is necessary to:

- support each school in planning, delivery, and evaluation related to SHSMs;
- analyse program data to ensure program quality;
- meet requirements for reports and deliverables;
- promote collaboration between schools and partners to ensure program quality.

The following chart can be used to help ensure a common understanding of roles and responsibilities of the board SHSM lead and members of school SHSM teams (e.g., school SHSM lead, school administrator, major subject teachers, teachers of other required courses, cooperative education teachers, guidance counsellors). In the left-hand column, indicate who will be responsible for each of the implementation tasks listed on the right.

Who is responsible?	Implementation task
	1. Program pathways (apprenticeship, college, workplace, or university) • Ensure that approved SHSM credits are available for all four pathways. Submit pathways chart for approval to the ministry for all SHSMs delivered by the board, showing course availability for each, by sector and by school. • Submit any interdisciplinary courses (IDCs) to the ministry for approval. • Establish and determine procedures for tracking credits for individual students' programs, to ensure that students fulfil the credits required in the bundle for their particular pathway and sector and the area of focus.
	2. Major credits (four required, including at least one Grade 11 credit and one Grade 12 credit) • Ensure that each student in the program has selected approved major credits that are appropriate for the sector and the area of focus of his or her SHSM (according to the list approved by the ministry). • Consider if the student would benefit from substituting one of the four major credits with a cooperative education credit related to the sector. (This credit would be additional to the two cooperative education credits required in the bundle of credits.)

Who is responsible?	Implementation task
	3. Cooperative education credits (two required) • Ensure that each student in the SHSM program earns two cooperative education credits related to one of the SHSM credits (i.e., a major credit or one of the other required credits). (See also p. A1-7.) • Consider how to enable each student to complete the cooperative education credit requirement (e.g., by investigating options to earn cooperative education credits in the summer, after hours, or online)
	4. Contextualized learning activities (CLAs) for other required credits • Ensure that a CLA is delivered in each of the other required credits. • Establish and ensure the implementation of a procedure for tracking individual students' completion of the appropriate CLAs related to their other required credits
	5. Certification and training • Ensure that students are able to obtain all the certifications and training required for the SHSM in their sector. • Explore, with sector partners, ways of reducing associated costs (e.g., "train the trainer" options; having SHSM students take part in the sector partner's regular training programs). • Establish and ensure the implementation of a procedure for tracking individual students' completion of the compulsory and optional certification and/or training required for their SHSM.
	6. Experiential learning and career exploration activities • Develop a plan to facilitate opportunities for experiential learning and career exploration activities. • Build and promote community support for such activities (e.g., by arranging plant tours and field trips; by taking part in skills competitions). • Establish and determine procedures for tracking individual students' completion of experiential learning and career exploration activities as part of their SHSM program.
	7. Documentation of Essential Skills and work habits using Ontario Skills Passport (OSP) tools • Ensure that teachers are trained in the use of the OSP. • Ensure that OSP tools are used by students to document their use and development of Essential Skills and work habits. • Establish and ensure the implementation of a procedure for tracking individual students' use of OSP tools to document the development of their Essential Skills and work habits throughout their program.
	8. Reach ahead experiences • Develop a plan to facilitate the delivery of reach ahead experiences relevant to the four pathways. • Develop a procedure for cataloguing and assessing these experiences to help with future planning. • Establish and ensure the implementation of a procedure for tracking individual students' completion of reach ahead experiences as part of their SHSM program.

Who is responsible?	Implementation task
	9. Partnerships with colleges, universities, and training centres - Facilitate the creation of partnerships by communicating with colleges, universities, and training centres. - Encourage representatives of colleges, universities, and training centres to play a part on the board or school SHSM advisory committee, and to participate in regional planning meetings (e.g., in connection with the School-College-Work Initiative and the Ontario Youth Apprenticeship Program (OYAP)).
	10. Partnerships with industry, business, and the community Facilitate the creation of partnerships by encouraging representatives of local business, industry, and the community to play a part on the board or school SHSM advisory committee.
	11. Partnerships with other schools and school boards - Establish partnerships with other schools and school boards to share responsibility for or facilitate provision of the following: - course offerings - sharing the expertise of teaching staff - cooperative education - contextualized learning and career exploration opportunities - reach ahead opportunities - certification and training - program coordination and implementation - student transportation - establishing partnerships within the community and the sector - establishing partnerships with colleges, training centres, and universities - marketing and communication - data collection
	12. The SHSM advisory committee and the SHSM implementation committee (the school team) - Establish the school SHSM advisory committee to support the implementation of a high-quality SHSM, promote partnerships, and consolidate connections and cooperation with the sector. - Ensure the establishment of a school team responsible for: - implementing the five required SHSM components; - promoting a professional learning community focused on the implementation and further development of the SHSM program; and - strengthening partnerships within the sector.
	13. Student transportation - Establish a process for allocating transportation funds. - Coordinate student transportation as needed (e.g., for contextualized learning and career exploration activities or reach ahead experiences).

Who is responsible?	Implementation task
	14. Budgeting, allocating funds, and reporting • Develop a budget for the program. • Develop a plan for allocating funds. • Consolidate school budget reports for submission to the ministry.
	15. SHSM Student registration • Establish and implement or refine the SHSM registration process for students. • Arrange the necessary support for students with special education needs. • Establish data collection procedures for ministry reports.
	16. Ensuring accuracy of information in the SHSM student record • Provide the necessary training to staff members responsible for student monitoring so that accurate information is included in the SHSM student record.
	17. Promoting and marketing the program • Develop an SHSM strategy and a marketing plan for each school and/or for the board. • Ensure that every school plans SHSM promotion and awareness-raising activities in their communities.
	18. Evaluating the program • Establish a process and develop tools to measure the success of the SHSM program (using both quantitative and qualitative measures). • Collect and analyse data about the program.
	19. Coordination of the SHSM program at the board level • Provide support to schools as needed. • Facilitate meetings with school teams to promote the sharing of effective practices and to strengthen collaboration among teams. • Ensure that schools submit the local data required for ministry reports in a timely manner.

C.4 A Sample School SHSM Action Plan

School board: _____

School: _____

Year: _____

Sector: _____

Implementation task	Strategies/ actions required	Budgetary needs (if any)	Lead	Timeline	Revision of strategies/ actions (February)	Revision of strategies/ actions and next steps (June)
1. Ensure that opportunities exist for students in all four pathways (apprenticeship training, college, workplace, university)						
2. Major credits (4 required, including at least 1 Gr. 11 and 1 Gr. 12 credit; 1 credit may be substituted with a co-op credit related to the sector, additional to the 2 co-op credits required in the bundle)						
3. Two co-operative education credits tied to the SHSM bundle of approved credits in the sector						
4. Contextualized learning activities delivered in the other required credit courses						

Implementation task	Strategies/ actions required	Budgetary needs (if any)	Lead	Timeline	Revision of strategies/ actions (February)	Revision of strategies/ actions and next steps (June)
5. Certifications and training programs						
6. Experiential learning and career exploration opportunities						
7. Documentation of Essential Skills and work habits using OSP tools						
8. Reach ahead experiences						
9. Partnerships with colleges, universities, and training centres						
10. Partnerships with groups in local industry, business, and the community						
11. Partnerships with other schools and school boards						
12. The SHSM advisory committee and the school team						
13. Student transportation						
14. Budgeting, allocating funds, reporting						
15. SHSM student registration						
16. Ensuring the accuracy of information in the SHSM student record						

Implementation task	Strategies/ actions required	Budgetary needs (if any)	Lead	Timeline	Revision of strategies/ actions (February)	Revision of strategies/ actions and next steps (June)
17. Promoting and marketing the program						
18. Monitoring student progress						
19. Evaluating the program						
20. Coordination						

C.5 Implementation Checklist for School Principals

Principals can use this checklist to confirm that the necessary resources and staff are in place to implement a high-quality Specialist High Skills Major program.

A. Staff/Program Readiness

- ☐ School staff are knowledgeable, passionate, and collaborative and want to champion the SHSM initiative.
- ☐ School staff value and promote all four SHSM pathways.
- ☐ School staff understand the five required components of the SHSM program, and use the Ontario Skills Passport (OSP) with students.
- ☐ School staff monitor and encourage students enrolled in an SHSM, and support teachers in the program.
- ☐ Teachers of other required credit courses integrate contextualized learning activities (CLAs) in their Grade 11 and/or 12 courses.
- ☐ A school SHSM team composed of staff members (e.g., the principal, vice-principal, guidance counsellor, cooperative education teacher, special education coordinator/teacher, subject teachers) has been established to ensure the implementation of all five SHSM components.
- ☐ A school advisory committee made up of members of the school SHSM team, community and sector partners, and representatives of postsecondary institutions and training centres has been established (see section B, below).
- ☐ The school advisory committee has established processes to facilitate the implementation of the five required SHSM components.
- ☐ School staff are aware of the process for registering SHSM students and monitoring their progress throughout their SHSM program.
- ☐ Requirements for reports, student tracking, and program evaluation have been established to ensure the delivery of a high-quality program.

B. The Board or School SHSM Advisory Committee

- ☐ An advisory committee has been established at the school or board level to promote and support the SHSM initiative, provide direction to the school team, support program implementation, and develop opportunities for experiential learning.
- ☐ The SHSM advisory committee includes members of the community representing the SHSM sector(s).
- ☐ The SHSM advisory committee includes representatives of colleges and universities and/or training centres.

- ☐ The SHSM advisory committee includes some members of the school SHSM team (e.g., teachers of major credit courses, teachers of other required credit courses, guidance counsellor, cooperative education teacher, special education coordinator/teacher, member of the Student Success team, principal, vice-principal).
- ☐ The SHSM advisory committee has established and shared a meeting schedule.
- ☐ The SHSM advisory committee has established priorities for the year.

C. The School SHSM Team

1. The school SHSM team has established procedures to:
 - ☐ complete and review the school action plan
 - ☐ enroll students in the SHSM program
 - ☐ track credits of SHSM students
 - ☐ track and document certifications and training programs that students have completed
 - ☐ track and record students' completion of experiential learning and career exploration activities
 - ☐ track and record the completion of reach ahead experiences
 - ☐ ensure that students develop and document the demonstration of Essential Skills and work habits required in their sector
 - ☐ document contextualized learning activities completed by students in their other required credit courses
 - ☐ identify students' needs and offer additional support, as necessary
 - ☐ promote the SHSM at the school, in elementary schools, among parents, and in the community
 - ☐ collect quantitative and qualitative data (e.g., feedback from students, staff, parents, and community partners) to evaluate the success of the program
 - ☐ monitor budgetary spending
 - ☐ prepare reports for the school board and the ministry
2. The school SHSM team has assigned roles and responsibilities to:
 - ☐ develop the four pathways with credits that meet ministry requirements for the SHSM bundle of credits
 - ☐ develop contextualized learning activities for delivery in the other required credit courses
 - ☐ facilitate delivery of the certifications and training that students need to obtain (e.g., decide on the elective certifications and training programs that are most appropriate to and that align best with the focus of the program; decide on the most appropriate delivery methods and delivery agents for compulsory and elective certifications and training programs; negotiate and arrange for payment of fees; arrange for transportation; establish timetables)
 - ☐ facilitate delivery of experiential learning and career exploration activities to be completed by students
 - ☐ facilitate delivery of reach ahead opportunities in each of the four pathways

- ☐ promote and facilitate employers' use of the OSP Work Plan tool to record the Essential Skills and work habits that students demonstrate in the workplace
- ☐ address student transportation needs
- ☐ facilitate cooperative education placements
- ☐ develop a plan and promotional materials to inform students in elementary schools about the SHSM program
- ☐ develop marketing tools to help engage sector and community partners, as well as to promote the program within the school
- ☐ actively seek out and develop partnerships with other elementary and secondary schools, school boards, postsecondary institutions, training centres, and local sector-related businesses

D. The Five Components of the Specialist High Skills Major

1. Required bundle of credits

- ☐ All students are able to obtain the eight to ten credits (depending on the program) required in the bundle for their particular SHSM over a two-year period, in Grades 11 and 12.
- ☐ Required courses for all four pathways for SHSMs offered by the school are developed and available.
- ☐ Staff members teaching the other required credit courses for the program are ready to integrate the contextualized learning activities into instruction.
- ☐ The members of the school SHSM team work in collaboration with cooperative education teachers to organize placements for students in the program.

2. Sector-recognized certification and training

- ☐ One or more members of the school SHSM team have agreed to take responsibility for this component.
- ☐ A plan has been established to guarantee that students will be able to obtain required certifications and training within a two-year period.
- ☐ The members of the school SHSM team facilitate program delivery by working collaboratively with the board SHSM lead and with other schools across the province that offer programs in the same sector.
- ☐ A procedure has been developed to document and track students' completion of required certifications and training.
- ☐ Teachers and school staff are informed about documentation and tracking procedures for this component of the program.

3. Experiential learning and career exploration activities

- ☐ One or more members of the school SHSM team have agreed to take responsibility for this component.
- ☐ A plan has been established to ensure the tracking and documentation of these activities.

- ☐ The members of the school SHSM team collaborate with the cooperative education teacher in planning these activities.
 - ☐ Support in planning and implementing opportunities for experiential learning and career exploration has been solicited from members of the advisory committee, the board SHSM lead, and other schools that offer programs in the same sector.
 - ☐ Students and school staff are informed about documentation procedures for this component of the program.
4. Reach ahead experiences
- ☐ One or more members of the school SHSM team have agreed to take responsibility for this component.
 - ☐ A plan has been established to ensure the tracking and documentation of these experiences.
 - ☐ The members of the school team consult with sector partners and representatives of colleges, training centres, and universities, as well as the school advisory committee, the board SHSM lead, and other schools across the province that offer programs in the same sector, to facilitate opportunities for reach ahead experiences for students in the program.
5. Essential Skills and work habits of the OSP
- ☐ The cooperative education teacher and teachers of SHSM major credit and other required credit courses are familiar with the OSP.
 - ☐ Teachers use the OSP in their class activities, especially in the Grade 10 career studies course.
 - ☐ The cooperative education teacher will facilitate employers' use of the OSP Work Plan to document students' Essential Skills and work habits and provide constructive feedback and assessment.

E. Tracking, Supervision, and Production of Reports

- ☐ The school team has implemented a procedure to track students' completion of the five SHSM components.
- ☐ One or more members of the school SHSM team have agreed to take responsibility for implementing procedures for tracking and documenting students' progress in the program.
- ☐ The team has developed processes for monitoring students' progress, supporting individual students, and helping students select the courses they need to complete their SHSM.
- ☐ School guidance counsellors are aware of the information that must be provided for a student to obtain a diploma with the SHSM seal and will be responsible for checking that all SHSM requirements have been met.
- ☐ Staff members are familiar with the procedure for tracking student progress.
- ☐ Tools have been developed to collect, from staff members, students, parents, and community partners, qualitative data that will allow members of the advisory committee to measure the progress of implementation and the quality of SHSM programs.

- ☐ Marketing tools have been developed to promote the SHSM among elementary and secondary school students, and the general public, in the community.
- ☐ Members of the school team are aware of the requirements for submitting reports to the school board and the ministry.
- ☐ The school's administrative team is aware of ministry reporting requirements, and sets timelines for consolidating SHSM-related data (e.g., data on students in the program; budget-related data) to ensure that required reports are completed accurately and in a timely manner. The dates for the three required SHSM reports (initial, interim, and final) are identified in the annual ministry memo to the Director of the Board.