

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.

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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 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. Sector-recognized certifications and/or training courses/programs

This SHSM sector requires students to complete a specified number of *compulsory* and *elective* sector-recognized certifications and/or training courses/programs, as indicated in the following table. NOTE: Where an item in the table is capitalized, it is the proper name of the specific certification or training course/program that is appropriate for the SHSM. Where an item is lowercased, it is the name of an area, type, or category of training for which specific certifications or training courses/programs should be selected by the school or board. The requirements are summarized in the table below.

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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	basic electrical safety	computer-aided design and computer-aided manufacturing (CAD/CAM)	customer service
Drive Clean	environmental spills	ergonomics	fall protection
filling propane and motor fuel tanks	fire safety and fire extinguisher use	Innovation, Creativity and Entrepreneurship (ICE)	introduction to logistics
ladder safety training	leadership skills	lockout/tagging	original equipment manufacturer's training
ozone-depletion prevention	Pleasure Craft Operator	portfolio development	project management
sector-specific regulations and legislation	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.

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.

TOOLS AND RESOURCES

Visit the ministry's SHSM website at www.edu.gov.on.ca/morestudentsuccess/shsm.html for related resources.

- **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 <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 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
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Aerospace Engineer 2146 • Automotive Engineer 2132 • Industrial Designer 2252 • Urban Planner 2153 	<ul style="list-style-type: none"> • 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