



Is this your future career?

Experiential learning, reach ahead activities, certification and more... at NO COST to you.

About the Specialist High Skills Major (SHSM)

The Specialist High Skills Major (SHSM) is a specialized program approved by the Ministry of Education 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 prepare in a focused way for graduation and postsecondary education, training or employment.

Profile - Energy

Energy is an emerging and expanding sector that encompasses all aspects of energy generation, distribution and consumption, including research and development, design, construction, installation and maintenance.

Core industries in this sector include:

- renewable and alternative energy such as wind, solar and biomass
- power generation and distribution
- fossil fuels
- energy efficiency

For more information, news articles and where this program is being offered, visit SHSM.rainbowschools.ca

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
- Three other required credits from the Ontario curriculum, in English, mathematics and science, or Canadian and world studies, in which some expectations are met through learning activities contextualized to the energy sector
- Two co-operative education credits that provide authentic learning experiences in a workplace setting, enabling students to refine, extend, apply and practise sector-specific knowledge and skills

Exception: If a student obtains a four (4) credit co-op, they may choose to use one additional co-operative education credit to substitute for one “major credit” and/or one “other required credit” (not from the Math or English categories).

Required Credits	Energy Major	English*	Mathematics*	Business Studies or Canadian and World Studies or Science*	Co-operative Education
Grade 11	2		1		
Grade 12	2	1		1	2
Number of credits (Total = 9)	4	1	1	1	2

* Includes content delivered in the sector's context.

There are NO extra credits required to complete this program.

All required credits may be obtained within the 30 required credits for the Ontario Secondary School Diploma (OSSD).

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

The SHSM in energy 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 list 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.

Four Compulsory:			
Cardiopulmonary Resuscitation (CPR) Level A	generic (i.e. not site specific) instruction about the Workplace Hazardous Materials Information System (WHMIS)	Standard First Aid	automated external defibrillation (AED)

Three Electives from the list below:			
computer-aided design and computer-aided manufacturing (CAD/CAM)	confined space awareness	customer service	electrical safety
elevated work platforms	energy efficiency training	ergonomics	extinguishing fires
fall protection	geographic information system (GIS)	global positioning system (GPS)	hazardous materials
health and safety – basic	hoisting and rigging	lift truck safety	lockout/tagging
personal protective equipment – energy	pipeline construction safety	radiation safety	trenching safety

3. Experiential learning and career exploration activities

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

- one-on-one observation of a co-operative education student at a placement in the energy sector (example of job twinning)
- a day-long observation of an energy sector worker (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 (example of work experience)
- attendance at an energy sector trade show, conference, symposium or 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 competition focused on energy
- a tour of a wind farm or generating station
- volunteering with a non-profit organization focused on energy conservation

Experiential learning activities are at NO COST.

(Exceptions may apply to out of town trips.)

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

Reach ahead activities are at NO COST.

(Exceptions may apply to out of town trips.)

5. Essential Skills and work habits and the OSP

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

Seven Key Benefits for Students

Pursuing a 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, 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

Occupations in the Energy Sector

The following table provides examples of occupations in the energy sector, with corresponding National Occupation Classifications, sorted according to the type of postsecondary education or training the occupations would normally require.

Apprenticeship Training
<ul style="list-style-type: none"> • 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
University
<ul style="list-style-type: none"> • 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

***Note:** Some of the names of occupations in this table may differ slightly from the names given in the National Occupation Classification system.*

The names listed here reflect common usage by institutions and organizations in this sector in Ontario.

College

- 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

Workplace

- 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

Limited
Enrolment!

Specialist High Skills Major – Energy

Personal Information: Please print neatly and provide the information below.

Legal Name: _____
Surname First Name Middle Initial

Current School: _____ Student ID #: _____

Home Address: _____

City/Town: _____ Postal Code: _____

Home Telephone: _____ Cell: _____ E-Mail: _____

Which pathway do you plan to pursue? (Please check one.)

Apprenticeship Training Workplace College University

Are you currently enrolled as an OYAP student? Yes No

Have you taken or are you currently enrolled in any Dual Credit courses? Yes No

If yes, please provide details: Course Code _____ Course Name _____

Currently enrolled: Yes No

Completed: Yes No If yes, provide date of completion: _____

Student's Signature

Parent/Guardian Signature

Print name (Student)

Print name (Parent/Guardian)

Date

Once you have completed the Registration Form, please submit it to the Guidance Department at your school for processing.

A member of the SHSM team will be in contact with you shortly to set up your file and get you started on your journey to success.

In accordance with the Municipal Freedom of Information and Protection of Privacy Act, personal information is being collected under the authority of the Education Act and will be used to register students in a Specialist High Skills Major. For more information, please contact the Principal.

Congratulations on choosing an exciting future!

School Contact Information: