FSN Training & Development Inc.
12 Forestgreen Drive, Uxbridge ON L9P 0B8
Tel: 905-649-7670 info@fsntraining.com

Proudly Canadian

Registration Form
Internal Combustion Engine (ICE) Training

The ICE-P or ICE-IE-P programs are for mechanics who work on propane powered vehicles & industrial equipment. The 2-day program teaches Ontario Regulations, propane theory, code requirements and engine operation & components in preparation for the TSSA Provincial ICE exam.

Course Info

Location:

Holiday Inn Express – Toronto North York
30 Norfinch Drive
North York, ON M3N 1X1
Hotel Booking Link
416-665-3500 **(if booking a room ask for the "FSN Training" rate)**

PROPANE Courses - $1195 + $265** TSSA & Admin. fee per person ($1460) + HST = $1649.80
** subject to be changed by TSSA

Please check off registration date & course you require

Propane - 8am–5pm

More courses will be added if required

~~Jan 17&18, 2026~~	☐	~~ICE-IE-P (Industrial Equipment)~~	☐	~~ICE-P (Automotive)~~ ~~Copy of license required, ICE-IE exams will be ordered if no copy is provided~~
~~Feb 28 & Mar 1, 2026~~	☐	~~ICE-IE-P (Industrial Equipment)~~	☐	~~ICE-P (Automotive)~~ ~~Copy of license required, ICE-IE exams will be ordered if no copy is provided~~
~~Mar 28&29, 2026~~	☐	~~ICE-IE-P (Industrial Equipment)~~	☐	~~ICE-P (Automotive)~~ ~~Copy of license required, ICE-IE exams will be ordered if no copy is provided~~
~~Apr 21&22, 2026~~	☐	~~ICE-IE-P (Industrial Equipment)~~	☐	~~ICE-P (Automotive)~~ ~~Copy of license required, ICE-IE exams will be ordered if no copy is provided~~
May 30&31, 2026	☐	ICE-IE-P (Industrial Equipment)	☐	ICE-P (Automotive) Copy of license required, ICE-IE exams will be ordered if no copy is provided
Sept 26&27, 2026	☐	ICE-IE-P (Industrial Equipment)	☐	ICE-P (Automotive) Copy of license required, ICE-IE exams will be ordered if no copy is provided
Oct 20&21, 2026	☐	ICE-IE-P (Industrial Equipment)	☐	ICE-P (Automotive) Copy of license required, ICE-IE exams will be ordered if no copy is provided
Nov 21&22, 2026	☐	ICE-IE-P (Industrial Equipment)	☐	ICE-P (Automotive) Copy of license required, ICE-IE exams will be ordered if no copy is provided

To register, please complete & return the following to info@fsntraining.com

1. **Register for an account with TSSA (if you do not have one already). https://www.tssa.org/tssa-portals**
2. **A colour copy of your Government ID. (required by TSSA)**
3. **A colour copy of your mechanic's license (if applying for ICE-P or ICE-NG)**
4. **This registration Form, including your TSSA Account #**

NOTE:

1. **20 business days' notice is REQUIRED PRIOR to course date to order exams from TSSA**
2. **NEW: The TSSA & Admin Fee of $260** is NON-REFUNDABLE after the time of booking.**
   **** subject to be changed by TSSA**

***All information below is required to register with TSSA.**

Attendee

Name* _____ **Date of Birth*** _____ **TSSA Account #*** _____

Address* _____

City* _____ **Province*** _____ **Postal Code*** _____

Phone Number* _____ **Email Address*** _____

Billing Info

Company Contact Name _____

Company* _____

Address _____ City: _____ Postal Code _____

Tel _____ Email* _____

Payment Info

Total Order amount $_____
(Cancelation Fee: If less than a full 10 business days notice is given, the full course fee will be charged. The TSSA & Admin Fee of $265 is NON-REFUNDABLE after the time of booking)

Credit Card: ☐ Visa ☐ Master Card

Card # _____ Expiry: _____ CVV _____

Name on Card: _____ Signature: _____

PAYMENT must be received with this Registration to reserve the seat(s).

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Preparing for the ICE-P / ICE IE-P Programs

PLEASE **READ** THIS PRIOR TO SENDING STUDENTS TO THE ICE-P / ICE-IE-P PROGRAM

1. The ICE program is a 2-day course that covers some basic information working with propane engines and prepares the student to write the ICE exam.
2. The exam is issued by TSSA and contains about 75 multiple choice questions.
3. The exam will test students on propane, engine knowledge as well as the regulations that apply to this equipment.
4. There is a great deal of material covered over the two days and students will be required to look up information in the various regulations. As such, a **good command of the English language (reading and understanding) is required** for them to pass the exam which is only available in English.
5. In preparation for the course, we strongly recommend that the students do the following prior to coming to the course.
    a. **Use the summary and links provided to become familiar with**
        i. The TSS Act
        ii. O. Reg 211/01 – Propane Storage and Handling Regulation
        iii. O. Reg 215/01 – Fuel Industry Certificates Regulation
    b. **Review the "Things to Know about Propane"** summary and ask questions of experienced technicians.
    c. **Review the B 149.5:20 summary** and have an experienced technician show you the various tanks and components.
    d. **Review the Other Topics** provided to gain any additional information you can prior to taking the course.
    e. If possible, **work with an experienced technician** for several hours to obtain an overall idea of what you will be required to learn.

TSS Act

Link to the TSS Act: https://www.ontario.ca/laws/statute/00t16

Table of Contents – The Act is split into 5 Parts and then into various Sections

Part I – Purpose, Application, Definitions

Part II – Administration

Part III – Authorizations and Safety and Compliance Orders

Part IV – Inspections and Enforcement

Part V - General

Below are some of the key Sections that apply to what the ICE course covers.

Sec 1 - Purpose – TSSA's purpose is to enhance public safety

Sec 2 - Applications – The Act applies to fuels plus a variety of other areas

Sec 3 - Definitions – This section outlines what things "mean"

Sec 5 - Identification – Inspectors must provide proof that they are an inspector

Sec 14 - Safety Orders – These can be given by an inspector to shut down or correct infractions

Timeliness - Orders may be given orally and in writing within 7 days

Appeal – You can appeal an order to the director

Sec 17 - Inspections – Inspectors are allowed to enter a facility to do an inspection

Limitations – Inspector can't force entry

Sec 18 – Power of inspection

Assistance – Inspectors can bring someone in to help or assist them with the inspection.

Cooperation – You must cooperate with inspector and provide information if asked in writing

Sec 20 - Obstruction – You cannot interfere with or stop an inspector from carrying out their duties.

Operation – You cannot operate a "thing" if the inspector puts a seal on it

Sec 21 - Not Guilty – If you make all reasonable efforts to comply with regulations you can't be charged

Sec 22 - Appeals – Appeals can be taken to the director and then to Divisional Court who make the final decision

Sec 37 - Offences - $50k or 1 yr imprisonment for individuals, $1MM for corporations

Sec 41 - Duties of Employers – Contractors and employers must comply with the Act

O.Reg 211/01 – Propane Storage and Handling Regulation

Applies to Conversion Centers

Link to the O.Reg 211/01: https://www.ontario.ca/laws/regulation/010211

Contents – 32 Sections

Sec 1 - Interpretation – (Definitions)

Sec 2 – Application – Applies to storage and handling, transportation and transfer of propane and the conversion of highway and industrial vehicles.

Sec 4 – Regulation - No person shall operate, install, alter, repair etc. unless they follow the regulations

Sec 5 – Duty of Employer - Operators of facilities shall instruct employees, follow the regs and train them in emergency management and ensure everyone has certificates.

Sec 6 – Certificate – No person shall handle propane without a proper certificate

Sec 12 – Prohibited Activities – No person shall sell, install etc. appliances unless it is approved.

Sec 15 – Occurrence or Incident – Where CO, asphyxiation, explosion or fire has occurred, you must notify TSSA immediately

Interfere – You cannot interfere with any wreckage at the scene of an accident

Sec 17 – Safe Operating Condition – Owners and every person responsible for the operation of an appliance etc. must ensure it is in safe operating condition

Sec 19 – If there is an Immediate Hazard, certificate holders must notify the owner and shut down the appliance

Sec 20 - If there is a Non-Immediate Hazard, the certificate holder must give the owner written notice and 90 days to repair

Sec 23 – Registration as Contractor – Can't operate conversion center if not registered with TSSA

Sec 24 – Propane Conversions – All centers must ensure their conversions comply with the regulations and then affix a label to the vehicle once it is completed.

Sec 25 – Vehicle Operation – You can't operate the vehicle unless it was converted based on the regs and has the appropriate labels

O. Reg 215 – Fuel Industry Certificates Regulation

Link to O.Reg 215/01: https://www.ontario.ca/laws/regulation/010215

Contents – Outline certificates and requirements

Sec 1 - Interpretation (Definitions)

Eg. Direct Supervision – supervisor is on site in close proximity to worker

General Supervision – supervisor may or may not be on site but is available to assist

Sec 2 – Application - This reg applies to O.reg 211, 212, 213 & 214

Sec 3 – Certificates

- 6. ICE
- 7. ICE-IE

Sec 4 – Expiry and Renewal

- A person cannot work under an expired certificate
- A renewal can be done before the date of expiry or within one year after
- After one year, they must complete an upgrading course

Sec 13 – Additional Requirement of ICE

- For ICE-P you must have a mechanic's license and take an approved course
- For ICE-IE you must take an approved course

Sec 19 – Must notify TSSA within 30 days for change of address

Sec 27 – ICE certificate allowable functions

Sec 28 – ICE– IE allowable functions

Sec 53 – A supervising certificate holder is responsible of the work of a supervised person

Things to Know about Propane

1. Propane is a member of the hydrocarbon family
2. Chemical Formula is C3H8
3. It is also referred to as Liquified Petroleum Gas
4. Natural propane is a clear liquid and has no odour
5. Ethyl Mercaptan, an odourant, is added to propane at the refinery to help detect leaks
6. Mercaptan smells like rotten eggs or boiling cabbage
7. The odour is detectable at 1/5 of the lower level of flammability
8. The Lower Explosive (flammability) limit (LEL) for propane is 2.5%
9. The Upper Explosive (flammability) Limit (UEL) for propane is 9.5%
10. When propane burns completely it produces only water and carbon dioxide (H20) & (CO2)
11. Propane is cleaner burning than gasoline because it produces less soot, CO and oxides
12. Propane is 1.5 times heavier than air (Natural Gas is 0.5 as heavy as air)
13. Propane is non-toxic (non-poisonous)
14. Propane liquid boils at -42C (-44F)
15. At -42C (-44F) or colder there would be no vapour pressure
16. As the temperature rises, propane will boil and the pressure in a container rises
17. When liquid propane changes to vapour it expands 270 times
18. Propane can act as a solvent and dissolve natural rubber
19. Liquid propane in contact with your skin can cause freeze burns
20. Neoprene gloves are recommended to protect your hands against freeze burn
21. If someone gets a freeze burn, they should soak the area in lukewarm water
22. There are three things you need for propane to burn
    a. the fuel
    b. air
    c. a source of ignition
23. Propane in a combustion chamber will ignite between 920F – 1020F (493C -548C)
24. Propane burns at 0.46m/sec
25. The Octane number for propane is approximately 110
26. The chemically correct air-fuel ratio for propane by weight is 15:5:1

Note: Table 1.1 in the B149.1:20 provides a comparison of propane properties to butane and natural gas.

B149.5 – Installation Code for Propane Fuel Systems and Containers on Motor Vehicles

The CSA B149.5:20 Installation Code outlines the specific requirements for the installation and repair of propane fuel systems.

This is a National Code but may also include some changes for work done in Ontario. These Provincial changes are identified in the code book and are commonly referred to as the "coloured pages" and are included in the CAD (code adoption document)

Each repair shop/conversion center doing propane work is required to have a copy of this code at their site.

Each course participant should gain some familiarity with the B149.5 code book at your site prior to coming to the course.

As part of FSN's ICE program the code requirements will be covered in detail. This will include the sections on:

- Tank specifications and components
- Container installation
- Container protection
- Piping, tubing and hoses
- Joints and Connections
- Vapourizers, pressure regulators and fuel lock-offs
- Wiring
- Marking and labelling

Other Topics Covered in the ICE-P Program

In addition to the topics outlined so far there will be discussions on the following topics.

If possible, students can discuss these with experienced technicians at their workplace.

1. Propane Transfer
    a. Tank purging
    b. Filling containers
    c. Transferring between containers
2. Propane Cylinders – for industrial applications such as forklifts
    a. Valves
    b. Filling procedures
    c. Inspections
3. Ignition and propane
    a. Spark plugs and voltage
    b. Timing
    c. Combustion
4. Carburetion Systems
    a. Carburetor Components
    b. Vapourizors
    c. Fuelocks
    d. Operational Checks
    e. Maintenance
5. Wiring and Fuel Management
    a. O2 Sensors
    b. Dwell Meters
    c. Dual Fuel Systems
    d. Fuel Injection
    e. Gas Analyzers