

# GAS TECHNICIAN

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## Program Outline

<b>Major:</b>	GAST
<b>Length:</b>	1 Year
<b>Delivery:</b>	3 Semesters
<b>Credential:</b>	Ontario College Certificate
<b>Effective:</b>	2012-2013
<b>Location:</b>	Barrie, Owen Sound, South Georgian Bay
<b>Start:</b>	Fall (Barrie, Owen Sound), Winter (South Georgian Bay)

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### Description

This program provides the required skills to obtain the Technical Standards and Safety Authority (TSSA) Gas Technician III and Gas Technician II certifications. Gas Technician III deals with workplace safety, tools, characteristics of natural gas, codes/regulations, basic electricity, technical specifications, customer relations, basic piping systems, and an introduction to gas appliances. Gas Technician II includes advanced piping/tubing systems, electricity, controls, systems, appliances, gas meters, pressure regulators, gas-fired refrigerators, conversion burners, water heaters, forced warm air heating systems, hydronic heating systems, space heating, venting practices, forced air add-on devices, and air handling. By the end of the program students are prepared to write their TSSA Gas Fitter II exams in order to become fully qualified and licensed technicians.

### Career Opportunities

The program primarily prepares students for a career as a gas technician. However, employment may also be found in the areas of technical support and sales within the industry. There are also a number of apprenticeships that graduates may pursue in areas such as sheet metal, refrigeration, plumbing, and pipe fitting. For those who want to work in these trades, an apprenticeship is required after graduation.

### Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

- use industry specific customer relations practices in order to relate effectively to coworkers and customers;
- complete all work in accordance with applicable acts, regulations, legislation, and codes to ensure personal safety and enhance the safety of the public;
- promote safe handling, combustion, and efficiency with natural gas and propane as well as their related appliances;
- adhere to proper sequences of operations for heating systems and associated components by referencing and following technical manuals, specifications, schematics, drawings, and graphs;
- select and use hand tools and operate test equipment for their intended purposes;
- employ the basic electrical skills required in order to install, service, and troubleshoot gas appliances;
- solve problems related to the installation and servicing of heating appliances by drawing on an understanding of mechanical systems within a building envelope;
- install, service, maintain, and troubleshoot heating systems and their related components;
- identify and incorporate strategies for ongoing personal and professional development that will lead to enhanced work performance and career opportunities, and keep pace with industry changes.

### **The Program Progression:**

Fall Intake - Barrie, Owen Sound

Sem 1	Sem 2	Sem 3
Fall 2012	Winter 2013	Summer 2013

Winter Intake - South Georgian Bay

Sem 1	Sem 2	Sem 3
Winter 2013	Summer 2013	Fall 2013

### **Admission Requirements:**

Applicants must meet ONE of the following requirements to be eligible for admission to this program:

- OSS Curriculum: OSSD or equivalent with Grade 12 English (C) or (U) (ENG4C, ENG4U)
- Academic and Career Entrance Certificate (ACE) program with: Communications

- Ontario High School Equivalency Certificate (GED)
- Mature applicant with standing in the required courses and/or mature student testing that meets the minimum standards for admission

Applicants who are 19 years of age or over by the first day of classes, and who lack the academic entrance qualifications, may be considered for entrance to an appropriate post-secondary diploma or certificate program as mature applicants. Each applicant will be considered on an individual basis and acceptance will be determined by counselling, Communication Placement Assessment (CPA), previous post-secondary education and evaluation of experience. Some programs also have specific prerequisite requirements that must be met prior to admission. Mature applicants must meet all program specific prerequisites. Those applying as mature students and having no documentation of Grade 12 education must supply, if required, proof of age, such as a copy of an official birth certificate or driver's licence. Refer to Section 2.5 and 2.6 of the Academic Calendar for further details.

#### **Graduation Requirements:**

- 10 Mandatory Courses
- 2 Communications Courses
- 2 General Education Courses

#### **Graduation Eligibility:**

To graduate from this program, the passing weighted average for promotion through each semester, and to graduate is 60%. Additionally, a student must attain a minimum of 50% or a letter grade of P (Pass) or S (Satisfactory) in each course in each semester unless otherwise stated on the course outline.

#### **Mandatory Courses**

- GAST1000 Introduction to Electricity
- GAST1001 Professional Practices
- GAST1002 Piping and Tubing Systems
- GAST1003 Introduction to Gas Appliances
- GAST1004 Pressure Regulator Controls
- GAST1006 Gas Appliances
- GAST1007 Water Heaters and Hydronic Heating
- GAST1008 Forced Air and Space Heating
- GAST1009 Venting
- GAST1010 Forced Air Add-Ons and Air Handling

#### Communications Courses

To be selected at time of registration from the College list, as determined by testing.

#### General Education Courses

To be selected from College list

#### **Course Descriptions:**

##### **GAST1000 Introduction to Electricity 42.0 Hours**

Students study basic electrical theory as it applies to the work of a gas technician. The required practical skills with electricity, such as how to measure supply wiring are covered. This course also introduces students to electrical measuring and testing instruments.

##### **GAST1001 Professional Practices 42.0 Hours**

This course covers customer relations as well as a variety of professional skills that are important for gas technicians. The course content emphasizes workplace safety and the interpretation of installation codes, acts and regulations. Students also study technical manuals, specifications, schematics, drawings and graphs in order to learn the relationship between mechanical and building systems.

##### **GAST1002 Piping and Tubing Systems 42.0 Hours**

Students apply the theoretical and practical skills that gas technicians require in order to install, service, and maintain piping and tubing. This includes hands-on work with piping/tubing systems greater than 2" and/or those that supply pressure greater than 0.5" psig.

##### **GAST1003 Introduction to Gas Appliances 70.0 Hours**

This course identifies the properties and characteristics of natural gas and propane with emphasis on the safe handling of natural gas. Students also apply basic concepts related to gas appliances as well as practical skills with the use of fasteners, hand tools, and power tools.

##### **GAST1004 Pressure Regulator Controls 42.0 Hours**

This course builds on the skills that students have developed with piping and tubing. This includes the important procedures used by Gas technicians in order to install, service and maintain pressure regulators and relief valves. In addition this course introduces important concepts related to mechanical and electronic controls.

##### **GAST1006 Gas Appliances 126.0 Hours**

This course identifies advanced concepts related to gas appliances. In addition students apply the practical and theoretical components related to the installation, servicing, and

maintenance of non-vented gas appliances (including barbecues), domestic gas-fired refrigerators and conversion burners. This course also covers electrical work as it relates to gas appliances.

P- GAST1003 Introduction to Gas Appliances

GAST1007 Water Heaters and Hydronic Heating 84.0 Hours

Students are introduced to the skills and knowledge required to install, service, and, maintain water heaters, combo units and portable water heaters. In addition this course covers the installation, service, and maintenance of gas fired hydronic heating appliances as well as those accessories that form an integral part of these appliances. Mechanical and electronic controls related to water heaters and hydronic heating devices are also examined.

GAST1008 Forced Air and Space Heating 84.0 Hours

The installation, service, and maintenance of forced warm air heating systems is the primary focus of this course. In addition students work with space-heating and decorative appliances. This course also covers the mechanical and electronic controls related to forced warm air heating systems and space heating appliances.

GAST1009 Venting 42.0 Hours

The theoretical and practical skills related to venting are covered in this course. Students are introduced to the practical procedures required to size, install, inspect, and repair venting systems.

GAST1010 Forced Air Add-Ons and Air Handling 56.0 Hours

Students in this course assess duct design, size plenum connection, and tie into an existing duct system. In addition, this course covers the installation, service, and maintenance of forced air add-on devices including the selection.

**Course Description Legend**

P = Prerequisite; C = Concurrent prerequisite; CO= Corequisite

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