

# JTAC Program Registration Form

## 2011-2012

or Phone  
Your Request to:  
(905) 790-9662  
or  
1-888-305-9993

or Fax  
Completed  
Registration form to:  
(905) 790-9711

or Mail  
Completed Registration  
form to:  
419 Deerhurst Dr.  
Brampton, Ont.  
L6T 5K3

Please indicate your selections in order of preference. (i.e. 1, 2, 3 etc. )

Program Selection	Description	Dates & Locations	Choice
<p style="text-align: center;"><b>Green Mechanical Systems Awareness</b></p> <p>This is a prep course for the U.A. Certification (on-line exam at a different date)</p>	<p>Awareness of fundamental and emerging Green technologies</p> <p>The following areas are covered:</p> <ul style="list-style-type: none"> <li>• Concepts and terminology</li> <li>• Energy and efficiency</li> </ul> <p>Products and systems</p> <ul style="list-style-type: none"> <li>• HVAC</li> <li>• Solar</li> <li>• Plumbing</li> </ul> <p>A basic overview for awareness.</p>	<p style="text-align: center;"><b>Week-End</b></p> <p>Saturday &amp; Sunday</p> <p style="text-align: center;">January 21 &amp; 22, 2012</p> <p>8:30am to 4:30pm @ T.C. Brampton</p>	
<p style="text-align: center;"><b>LEED</b></p> <p>LEED what does it mean to you and why should you care?</p> <p>This is a pre-requisite to additional LEED courses</p>	<p style="text-align: center;">An introduction to:</p> <p>The LEED rating systems will be the subject of this seminar.</p> <ul style="list-style-type: none"> <li>• What is LEED?</li> <li>• Who is involved?</li> <li>• Why is it used?</li> <li>• When is the rating system used?</li> <li>• And where is it going?</li> <li>• These are a few of the topics to be covered.</li> </ul>	<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday November 5, 2011 8:30am to 4:30pm @ T.C. Brampton</p>	
		<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday March 24, 2012 8:30am to 4:30pm @ T.C. Brampton</p>	
<p style="text-align: center;"><b>Commissioning an Overview</b></p> <p style="text-align: center;">The ASHRAE Commissioning System</p>	<p>The process will be examined to gain a familiarity with the application in new construction and existing buildings. As part of the LEED rating system, commissioning is becoming a regular part of the HVAC/R industry. The student will be provided with an overview of:</p> <ul style="list-style-type: none"> <li>• ASHRAE Guideline 0 – 2005</li> <li>• The Commissioning Process</li> <li>• Commissioning is a quality-focused process which enhances the delivery of your projects.</li> </ul>	<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday November 26, 2011 8:30am to 4:30pm @ T.C. Brampton</p>	

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<p style="text-align: center;"><b>Thermography</b></p> <p style="text-align: center;">Learn what your thermal imager is seeing</p>	<p>Thermography has various uses within the HVAC/R industry and an overview of these various applications will be presented. From a basic understanding of thermography and infrared imaging to proposed maintenance practices, the student will gain an understanding of the usage of thermal imaging technology. Using the thermal imaging camera to develop an understanding of infrared temperature measurement then examining applications.</p>	<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday March 31, 2012 8:30am to 4:30pm @ T.C. Brampton</p>	
<p style="text-align: center;"><b>Renewable Energy Systems</b></p> <p>A seminar covering the various renewable systems that are being used in the construction of high performance buildings.</p>	<p>As energy costs continue to rise, more and more renewable energy systems are being installed the landscape is changing. Learn about the applications of several renewable systems in operation at the Training Center. As an introduction, this seminar will prepare the student for continued pursuit of knowledge in this new emerging field.</p>	<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday February 25, 2012 8:30am to 4:30pm @ T.C. Brampton</p>	
<p style="text-align: center;"><i>New</i></p> <p style="text-align: center;"><b>Geo-Exchange Energy Systems</b></p> <p>A seminar covering the installation of Geo-exchange systems.</p>	<p>As energy costs continue to rise, more and more geo-exchange systems are being installed in the ICI sector. Learn about the aspects of these systems in regards installation, commissioning and service. Who are the Canadian Geo-Exchange Coalition and the International Ground Source Heat Pump Association. As an introduction, this seminar will prepare the student for continued pursuit of knowledge in this re-emerging emerging field.</p>	<p style="text-align: center;"><b>Saturday Only</b></p> <p style="text-align: center;">Saturday February 4, 2012 8:30am to 4:30pm @ T.C. Brampton</p>	
<p style="text-align: center;"><i>New</i></p> <p style="text-align: center;"><b>CO<sub>2</sub> Carbon Dioxide (R744) Basic Training</b></p>	<p>The R744 (CO<sub>2</sub>) introductory program will consist of the following: CO<sub>2</sub> Refrigeration Fundamentals. Introduce the basics of working on carbon dioxide systems and help prepare students for advanced studies of CO<sub>2</sub> (R744) refrigeration systems. The course will cover design, installation and maintenance issues, explaining the advantages and challenges of using R744, including leak and pressure testing, as well as charging and venting. Describing the basic components and functionality of CO<sub>2</sub> systems, including volatile secondary refrigerants (with direct expansion and cascade), trans-critical and direct expansion.</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;">Saturday &amp; Sunday February 11 and 12, 2012 8:30am to 4:30pm @ T.C. Brampton</p>	

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Program Selection	Description	Dates & Locations	Choice
<b>Electrical Troubleshooting Upgrade Program</b>	This course will review the process of using electrical HVACR diagrams in troubleshooting systems. Diagnostic equipment and their applications will be studied.  <i>Pre-requisite: 3<sup>rd</sup> year Apprentice</i>	<b>Week-end</b>  Saturday & Sunday April 28 & 29, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>R-410A Certification Program</b>  And a look at the new refrigerants replacing R-22 & R 134a  A certificate will be issued	<b>Manufacturers and Industry are requiring specific training for R410A</b>  <u>Topics</u> <ul style="list-style-type: none"> <li>• Safety and handling</li> <li>• Physical properties</li> <li>• System applications</li> <li>• Tools and equipment</li> </ul>	<b>Thursday Nights</b>  <b>On Demand</b>  <b>Call to register</b>  6:30pm to 9:30pm @ T.C. Brampton	
<b>Fundamentals of Brazing</b> <i>16 Students max.</i>	<b>Workshop for Mechanics or Apprentices looking to learn or refresh Brazing techniques</b>	<b>Week-end</b> Saturday & Sunday November 19 & 20, 2011 8:30am to 4:30pm @ T.C. Brampton	
<b>Fundamentals of Orbital Welding</b> <i>8 Students max.</i>	<b>Learn how to weld stainless steel tubing and fittings with a state-of-the-art Orbital Welding Machine CO<sub>2</sub> refrigerant compatible</b>	<b>Saturday Only</b>  Saturday March 17, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Basic Welding Technology 1</b> <i>8 Students max.</i>	<b>Workshop for Mechanics or Apprentices looking to learn or refresh Welding techniques</b> <ul style="list-style-type: none"> <li>• SMAW</li> <li>• GMAW</li> <li>• GTAW</li> </ul>	<b>Week-end</b> Saturday & Sunday January 14 & 15, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Welding Technology 2</b> <i>8 Students max.</i> <i>Prerequisite #1</i>	<b>Continuation from the Basic session building on the welding skills of the following</b> <ul style="list-style-type: none"> <li>• SMAW</li> <li>• GMAW</li> <li>• GTAW</li> </ul>	<b>Week-end</b> Saturday & Sunday February 11 & 12, 2012 8:30am to 4:30pm @ T.C. Brampton	

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<b>Introduction to Absorption Chillers</b> Chiller Background Recommended <i>12 Students Max</i>	Participants will be familiarized with the absorption terminology, components and the cycle. <ul style="list-style-type: none"> <li>• Learning the physics behind the operational cycle.</li> <li>• Understanding the safe use of a lithium bromide chiller.</li> <li>• Starting and verifying the chiller operation.</li> <li>• Maintaining the chiller on a daily basis.</li> <li>• Some hands-on and in-class training</li> </ul>	<b>Week-end</b> Saturday & Sunday December 10 & 11, 2011 8:30am to 4:30pm @ T.C. Brampton	
<b>Purge O &amp; M</b> <i>12 Students max.</i>	<b>Operation and Maintenance of Purge Units for Low Pressure Chillers (Focus on R123)</b>	<b>Saturday Only</b> February 11, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Chiller Micro-Processor</b> <i>12 Students max.</i>	<b>Microprocessor familiarization for low pressure (R123) Chillers York, Carrier and Trane to be studied Some hands-on with trainers will be included.</b>	<b>Week-End</b> Saturday & Sunday March 3 & 4, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>York YK High Pressure Centrifugal Tear-Down</b>	<b>Manufacturer Specific Training</b>  Each session will focus on the information and skills necessary to successfully tear down and rebuild the compressor and associated components.  <u><i>12 participants max.</i></u>	<b>Week-End</b> Saturday & Sunday January 14 & 15, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>McQuay CE High Pressure Centrifugal Tear Down</b>		<b>Week-End</b> Saturday & Sunday January 28 & 29, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Trane CVHE 3-stage Centrifugal Tear-Down</b>		<b>Week-End</b> Saturday & Sunday March 31 & April 1, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Chiller O&amp;M</b> <i>20 Students max.</i>	<b>Operation and Maintenance of Chillers Both Centrifugal and Positive Displacement Systems</b>	<b>Week-End</b> Saturday & Sunday February 4 & 5, 2012 8:30am to 4:30pm @ T.C. Brampton	
<b>Motors &amp; Pumps Service &amp; Repair</b> <i>12 Students Max</i>	<b>Procedures used in field repairs of motors and pumps.</b>	<b>Saturday Only</b> January 21, 2012 8:30am to 4:30pm @ T.C. Brampton	

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Program Selection	Description	Dates & Locations	Choice
<p><b>Electronic &amp; Microprocessor Controls</b></p> <p><b>Certificate Course</b></p> <p><b>40 hour</b></p> <p><b>**This course is recommended before taking any DDC and BAS courses**</b></p>	<p>This program is specifically designed for Refrigeration and Air- Conditioning Mechanics and Apprentices who want to develop their skills to work confidently in the Building Automation Technology Field.</p> <p>The participant upon completion of the <b>40-hour</b> course should have an understanding of EMC terminology and applications of the various inputs, outputs devices and communication protocols. Various types of input and output device shall be identified and explained through workplace examples. Through lab applications the participant's knowledge will be applied as they change input and output values integrating software and computers. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p> <p>Hands-on experience will include configuring and programming of specific control manufacturers' software and firmware.</p> <p style="text-align: center;">* Some homework will be assigned and credited</p>	<p><b>Monday Nights</b></p> <p>Starting November 7, 2011 12 weeks in length</p> <p><b>6:30pm to 9:30pm</b> @ T.C. Brampton</p>	
		<p><b>Multiple Week-Ends</b></p> <p>2-Saturdays &amp; Sundays January 14 &amp; 15, 2012 and January 28 &amp; 29, 2012</p> <p><b>8:30am to 4:30pm</b> @ T.C. Brampton</p>	
<p><b>Honeywell Controls &amp; LCBS System Basics</b></p> <p><i>12 Students Max</i></p>	<p><b>Manufacturer Specific Training</b></p> <p>The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a HW Lon based LCBS Building Automation Systems BAS. The <b>two-day</b> training session will compliment the general knowledge of the participants understanding of BAS through application of the LCBS software. In a lab environment, participants will commission the LCBS controls in small group projects. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p> <ul style="list-style-type: none"> <li>• Create and design network</li> <li>• Select components</li> <li>• XL 10, 15, 15C + actuators</li> <li>• Remote Applications</li> </ul>	<p><b>Thursdays 6-nights</b></p> <p>Starting November 3, 2011 6 weeks in length</p> <p><b>6:30pm to 9:30pm</b> @ T.C. Brampton</p>	
<p><b>Indoor Environmental Quality (IAQ)</b></p>	<p><b>An overview of the "Sick Building Syndrome".</b></p> <p><b>CO<sub>2</sub> Demand Ventilation. Contaminants affecting IEQ</b></p>	<p><b>Week-end Saturday &amp; Sunday</b> March 31 &amp; April 1, 2012</p> <p><b>8:30am to 4:30pm</b> @ T.C. Brampton</p>	

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<p style="text-align: center;"><b>Trane Tracker Control Systems</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;"><b>Manufacturer Specific Training</b></p> <p>The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a TRANE Tracker BAS. The <b>one-day</b> training session will compliment the general knowledge of the participants understanding of constant volume zoning. Application of a constant volume rooftop using pressure dependent, pressure independent and bypass dampers shall be discussed and demonstrated. Applying TRANE software in a lab environment the participants shall commission the lab trainer through an instructor led a group project. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p>	<p style="text-align: center;"><b>Saturday Only</b>  <b>Saturday</b>  <b>December 3, 2011</b>  <b>8:30am to 4:30pm</b>  <b>@ T.C. Brampton</b></p>	
<p style="text-align: center;"><b>Trane Tracer Control Systems</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;"><b>Manufacturer Specific Training</b></p> <p>The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a TRANE TRACER BAS. The <b>one-day</b> training session will advance the knowledge of the participants understanding of TRANE BAS through application of the TRACER SUMMIT software. In a lab environment, participants will discover the TRANE TRACER and TRANE Summit software through an instructor led group project using TRACER, MP 581 and associated controllers in the lab. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p>	<p style="text-align: center;"><b>Saturday Only</b>  <b>Saturday</b>  <b>March 24, 2012</b>  <b>8:30am to 4:30pm</b>  <b>@ T.C. Brampton</b></p>	
<p style="text-align: center;"><b>Johnson Controls UNT Controller Basics</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;"><b>Manufacturer Specific Training</b></p> <p>The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a JCI UNT BAS controller. The <b>two-day</b> training session should compliment the general knowledge of the participants understanding of BAS through application of the JCI HVAC Pro software. In a lab environment, participants will commission the UNT controller in small group projects. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;"><b>Saturday &amp; Sunday</b>  <b>November 12 &amp; 13,</b>  <b>2011</b>  <b>8:30am to 4:30pm</b>  <b>@ T.C. Brampton</b></p>	
<p style="text-align: center;"><b>York AutoZone Control system</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;"><b>Manufacturer Specific Training</b></p> <p>The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a YORK Autozone BAS. The <b>one-day</b> training session will compliment the general knowledge of the participants understanding of BAS. Application of a constant volume rooftop using pressure dependent, pressure independent and bypass dampers shall be discussed and demonstrated. Applying the software in a lab environment the participants shall build and commission the lab trainer as a group project. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.</p>	<p style="text-align: center;"><b>Sunday Only</b>  <b>Sunday</b>  <b>April 15, 2012</b>  <b>8:30am to 4:30pm</b>  <b>@ T.C. Brampton</b></p>	

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Program Selection	Description	Dates & Locations	Choice
<b>Johnson Controls</b>  <b>The DX9100 Controller</b>  <i>12 Students Max</i>	<b>Manufacturer Specific Training</b> The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a JCI DX9100 BAS controller. The <b>two-day</b> training session should compliment the general knowledge of the participants understanding of BAS through application of the JCI HVAC Pro software. In a lab environment, participants will commission the DX9100 controls in small group projects. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.	<b>Week-End</b>  <b>Saturday &amp; Sunday</b> <b>February 25 &amp; 26,</b> <b>2012</b> <b>8:30am to 4:30pm</b> <b>@ T.C. Brampton</b>	
<b>Johnson Controls</b>  <b>Facility Explorer</b>  <b>FX16 series Field Controller</b>  (DX 9100 Training Recommended) <i>12 Students Max</i>	<b>Manufacturer Specific Training</b> <ul style="list-style-type: none"> <li>• FX Applications</li> <li>• Control Strategies</li> <li>• Set-up and communications</li> <li>• Operations</li> <li>• Commissioning</li> <li>• A look at Supervisory</li> <li>• Programming Concepts</li> <li>• FX Networks &amp; Frame Work</li> </ul>	<b>Week-End</b>  <b>Saturday &amp; Sunday</b> <b>March 17 &amp; 18,</b> <b>2012</b> <b>8:30am to 4:30pm</b> <b>@ T.C. Brampton</b>	
<b>Johnson Controls</b>  <b>Supervisory Tridium Controllers</b>  <i>12 Students Max</i>	<b>Manufacturer Specific Training</b> The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a JCI FX Tridium controller. The <b>one-day</b> training session should advance the knowledge of the participants understanding of JCI BAS through application of the JCI FX Tridium controller. In a lab environment, participants will discover the JCI FX through an instructor led group project. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.	<b>Saturday Only</b>  <b>Saturday</b> <b>April 14, 2012</b> <b>8:30am to 4:30pm</b> <b>@ T.C. Brampton</b>	
<b>Carrier</b> <b>3V Control System &amp; CCN</b>  <i>12 Students Max</i>	<b>Manufacturer Specific Training</b> The participant upon completion should have an understanding of the functionality of the hardware and configuration process of a Carrier 3V BAS. The <b>two-day</b> training session will compliment the general knowledge of the participants understanding of Carrier 3V BAS. Application of a constant volume rooftop using pressure dependent, pressure independent and bypass dampers shall be discussed and demonstrated. Applying their knowledge in a lab environment the participants shall commission the 3V lab trainers in small groups. Literature shall be provided in electronic format beyond the required classroom presentation and lab documentation.	<b>Week-End</b>  <b>Saturday &amp; Sunday</b> <b>April 14 &amp; 15, 2012</b> <b>8:30am to 4:30pm</b> <b>@ T.C. Brampton</b>	

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<p><b>Combustion Basics &amp; Flue Gas Analysis</b></p> <p><b>With Practical</b></p> <p>(16 Students Max)</p>	<p>The purpose of this session is to review the basics of combustion from a technician's stand point. This course is designed for the industrial, commercial &amp; institutional service technician with emphasis on combustion concepts, and light on engineering formulas/theory.</p> <p>A thorough knowledge of combustion allows the technician to operate and understand virtually any flue gas analyzer.</p> <p>Special emphasis will be focused on carbon monoxide and NOX gas.</p> <p>A variety of gas analyzers will be studied and demonstrated.</p> <p>A course book will be supplied.</p>	<p><b>Saturday Only</b></p> <p><b>December 10, 2011</b></p> <p><b>8:30am to 4:30pm</b></p> <p><b>@ Brampton T.C.</b></p>	
		<p><b>Saturday Only</b></p> <p><b>March 10, 2012</b></p> <p><b>8:30am to 4:30pm</b></p> <p><b>@ Brampton T.C.</b></p>	
<p><b>Unitary/Roof Top Integrated Modular Control</b></p>	<p><b>Carrier</b></p> <p><b>Lennox</b></p> <p><b>Trane</b></p> <p><b>York</b></p> <p><b>Roof Top Control Systems.</b></p> <p><b>Servicing and troubleshooting of the associated microprocessor control modules. To include ignition and economizer boards.</b></p> <ul style="list-style-type: none"> <li>• IMC Basics</li> <li>• IMC Configuration</li> <li>• Errors &amp; Diagnostics</li> </ul>	<p><b>Monday Nights</b></p> <p><b>7-nights</b></p> <p><b>Starting April 2, 2012</b></p> <p><b>Schedule to be supplied</b></p> <p><b>6:30pm to 9:30pm</b></p> <p><b>@ T.C. Brampton</b></p>	
<p><b>Liebert Environmental Systems</b></p> <p><b>All processor Versions Up-to-date</b></p>	<p><b>An overview of the following topics:</b></p> <ul style="list-style-type: none"> <li>• <b>Microprocessors</b></li> <li>• <b>Software</b></li> <li>• <b>Unit Operation</b></li> <li>• <b>Troubleshooting</b></li> <li>• <b>Maintenance</b></li> </ul>	<p><b>Saturday Only</b></p> <p><b>April 21, 2012</b></p> <p><b>8:30am to 4:30pm</b></p> <p><b>@ T.C. Brampton</b></p>	
<p><b>Screw Compressors Theory &amp; Operation</b></p>	<p><b>An overview of various compressors and their applications will be studied. The operation, maintenance and servicing of popular types will be presented. Topics include:</b></p> <ul style="list-style-type: none"> <li>• Single drive rotor design with spur rotors</li> <li>• Twin helical parallel rotors</li> <li>• Tri parallel rotors</li> <li>• Various types of capacity control</li> <li>• Gear driven or an intermesh rotor and drive rotor</li> <li>• Multi stage compound screw compressors</li> <li>• Various application styles of Hot Gas Bypass</li> </ul>	<p><b>Tuesday Night</b></p> <p><b>March 6, 2012</b></p> <p><b>6:30pm to 9:30pm</b></p> <p><b>@ T.C. Brampton</b></p>	

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<p style="text-align: center;"><b>Nights</b></p> <p style="text-align: center;"><b>Basic Electronic Theory</b></p> <p><i>*Recommended before the EMC course*</i></p>	<p style="text-align: center;">Designed to present the basic fundamentals of Electronics pertaining to the HVAC &amp; R Industry.</p> <p style="text-align: center;">Some hands-on lab work will be included</p>	<p style="text-align: center;"><b>Thursdays</b></p> <p style="text-align: center;"><b>6-nights</b></p> <p style="text-align: center;">6:30pm to 9:30pm</p> <p style="text-align: center;">Starting</p> <p style="text-align: center;">January 12, 2012</p> <p style="text-align: center;">@ T.C. Brampton</p> <p style="text-align: center;">Schedule to be supplied</p>	
<p style="text-align: center;"><b>Nights</b></p> <p style="text-align: center;"><b>Motor Technology and The ECM (electronically commutated motor)</b></p>	<p style="text-align: center;">This is the Fractional Horse Power replacement of the future</p> <p style="text-align: center;">A complete review of motor technologies and starting techniques.</p> <p style="text-align: center;">Understanding and working with the ECM variable speed system.</p> <p style="text-align: center;"><i>Plus new Evergreen ECM replacement motors</i></p>	<p style="text-align: center;"><b>Thursdays</b></p> <p style="text-align: center;"><b>6-nights</b></p> <p style="text-align: center;">6:30pm to 9:30pm</p> <p style="text-align: center;">Starting</p> <p style="text-align: center;">March 1, 2012</p> <p style="text-align: center;">@ T.C. Brampton</p> <p style="text-align: center;">Schedule to be supplied</p>	
<p style="text-align: center;"><b>Practical PID Control Commissioning</b></p>	<p style="text-align: center;">This is a one day intense study of PID (Proportional, Integral, Derivative)</p> <ul style="list-style-type: none"> <li>• Definitions</li> <li>• Applications</li> <li>• Tuning</li> <li>• Troubleshooting</li> </ul>	<p style="text-align: center;"><b>Sunday Only</b></p> <p style="text-align: center;">November 27, 2011</p> <p style="text-align: center;">8:30am to 4:30pm</p> <p style="text-align: center;">@ T.C. Brampton</p>	
<p style="text-align: center;"><b>Variable Frequency Drives</b></p> <p style="text-align: center;"><i>12 Students max.</i></p>	<p style="text-align: center;">This course will provide an over-view of current drive fundamentals, operation and maintenance.</p> <p style="text-align: center;">Lab work included</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;">December 3 &amp; 4, 2011</p> <p style="text-align: center;">8:30am to 4:30pm</p> <p style="text-align: center;">@ T.C. Brampton</p>	
<p style="text-align: center;"><b>PLC Basics</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;">PLC Basics as applied to the HVACR industry</p> <p style="text-align: center;">Lab work included</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;">January 7 &amp; 8, 2012</p> <p style="text-align: center;">8:30am to 4:30pm</p> <p style="text-align: center;">@ T.C. Brampton</p>	
<p style="text-align: center;"><b>Power Quality Harmonic Analysis</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;">This course will provide an in-depth understanding of power-quality fundamentals &amp; correction.</p> <p style="text-align: center;">Lab work included.</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;">November 19 &amp; 20, 2011</p> <p style="text-align: center;">8:30am to 4:30pm</p> <p style="text-align: center;">@ T.C. Brampton</p>	
<p style="text-align: center;"><b>FFT Vibration Analysis for Electric Motors</b></p> <p style="text-align: center;"><i>12 Students Max</i></p>	<p style="text-align: center;">This course will provide an overview of Fast Fourier Transform Analysis vibration, balancing, predictive maintenance &amp; asset management.</p> <p style="text-align: center;">Lab work included.</p>	<p style="text-align: center;"><b>Week-End</b></p> <p style="text-align: center;">April 21 &amp; 22, 2012</p> <p style="text-align: center;">8:30am to 4:30pm</p> <p style="text-align: center;">@ T.C. Brampton</p>	

Name \_\_\_\_\_ . UA Card # \_\_\_\_\_ . Phone # \_\_\_\_\_

The above programs require a minimum of 12 participants, or as otherwise stated.

**Update on Refrigerant Handling Regulations (Ozone Depleting Substances, (ODS)) May 2011**  
**Effective January 2011, Ontario Regulation 463/10**  
**Made under the**  
**ENVIRONMENTAL PROTECTION ACT**  
**OZONE DEPLETING SUBSTANCES AND OTHER HALOCARBONS**

The Ontario Ministry of the Environment has amalgamated 5 different regulations pertaining to ozone depleting substances. One of these regulations (O. Reg. 189/94) concerned Refrigerants.

The 5 Regulations are as follows:

- O. Reg. 356/90
- O. Reg. 717/94
- O. Reg. 718/94
- O. Reg. 413/94
- O. Reg. 189/94

All 5 regulations have been revoked and replaced with the new regulation **On Reg 463/10**

For the most current copy of Ontario Regulation 463/10, please go to the following website:

[http://www.e-laws.gov.on.ca/html/source/regs/english/2010/elaws\\_src\\_regs\\_r10463\\_e.htm](http://www.e-laws.gov.on.ca/html/source/regs/english/2010/elaws_src_regs_r10463_e.htm)

The highlights of the regulation, **as they pertain to the ICI sector**, are listed below:

- **Fines** upon conviction for a person releasing a Class I ODS, Class II ODS or Halocarbon into the natural environment or into the environment of a building, may range from **\$5,000 to \$4,000,000 per day**
- Refrigerants subject to this regulation include: Class I ODS, Class II ODS or Halocarbon
- **When completing records, paper work or documentation, you must include the refrigerant Class name**, such as: CFC-12, HCFC-22, HFC-134a, HFC-410A
- Class I refrigerants include Chloro Fluor Carbons (CFC's), any of the halons, carbon tetrachloride, methyl chloroform and hydrobromofluorocarbons (HBFC's). The Class I refrigerants include any mixture including any of these substances or any isomer (different molecular arrangement) of these substances
- Class I CFC's include, but are not limited to: CFC-11, CFC-12, CFC-13, CFC-113, CFC-114, CFC-115, CFC-500, CFC-502, CFC-503
- Class II refrigerants include Hydro Chloro Fluoro Carbons (HCFC's) and any mixture containing any HCFC's as well any isomers of HCFC's
- Class II HCFC's include, but are not limited to: HCFC-22, HCFC-123, HCFC-124, HCFC-401, HCFC-409, etc.
- Halocarbon refrigerants include any Fluorocarbon (FC), HydroFluoroCarbon (HFC's) or any mixture that may contain any of these substances or any isomer of these substances.
- Halocarbon HFC's include but are not limited to: HFC-23, HFC-32, HFC-125, HFC-134a, HFC-404A, HFC-407A, HFC-407C, HFC-410A, HFC-507, HFC-508, etc.
- *Natural refrigerants and pure hydro carbons are not subject to this regulation*
- No one is allowed to discharge any Class I (ODS), Class II (ODS) or Halocarbon into the natural environment or into the environment of a building. *(for the few exceptions to this, please read the regulation carefully)* (once a customer has been notified that a system is leaking, they are responsible to have the equipment repaired or the refrigerant recovered/isolated from leaking)
- Refrigerant losses of 100 kg or greater must be reported immediately to the MOE by the person responsible for the discharge (customer if loss occurred before you arrived at the site or technician when servicing if they caused the leak)
- All low pressure chillers must have high efficiency purges
- Only certified persons may service or test refrigerant containing equipment (313A or 313D apprentice or C of Q and valid Ontario ODP certificate)
- You must have immediate access to refrigerant recovery equipment
- No one may add Class I, Class II or Halocarbon refrigerants for the purpose of leak testing *(ICI and residential sectors)*

- Upon finding a leak(s) within a system, you are responsible of immediately tagging the equipment with a notice and immediately notifying the customer of the leaks. (*onus of responsibility to have the leaks repaired or refrigerant recovered/isolated is now in the customer's hands*)
- A refrigerant leak test notice must include your name, date of test, ODP certificate # with expiry date, your employer's name/address, results of the leak test and a statement that no refrigerant is to be added until the leak(s) is/are repaired. No one can remove a leak test tag unless they are replacing with a new notice.
- Anyone who services or tests refrigerant containing equipment must keep records of anything pertaining to refrigerant purchases, refrigerant leak tests, refrigerant leakage rates, reason for refrigerant loss from a system/container, refrigerant addition/installation, leak repairs and refrigerant type/quantities used.
- Copies of all records and notices are to be kept for two years from date of test/service/installation, etc.
- Refrigeration Systems of greater than 22 kilowatts (6.25 tons) capacity may not have Class I (CFC's) installed/added into them.
- Low pressure chillers may not have Class I CFC's added unless the equipment meets the accepted exemptions according to the regulations
- **Class I CFC containing equipment of greater than 22 kilowatts and Class I CFC containing chillers, will not be allowed to operate on or after January 1, 2012. They must be either replaced or converted to non Class I (CFC) refrigerants in order to operate.**
- All containers and systems that are being decommissioned must have notices on them stating that there is no refrigerant remaining, along with date, name, ODP #/expiry date and employer
- No containers may go to a dump or land fill site (containers must be recycle/refillable) containers must be tested every 5 years
- ONLY ODP certified persons may transfer refrigerant to and from containers/equipment
- Containers must be identifiable with regards to refrigerant type, quantity, refillable/recyclable, cannot be deposited at a dump or landfill site and deposit amount
- As of January 1, 2012 any recaptured Class I (CFC's) must be returned to a wholesaler (at no return cost to you)
- As of July 1, 2012 recovered Class I (CFC's) become hazardous wastes
- Out of Province ODP cards are valid providing the certificate holder satisfies the requirements of section 34
- **You must renew your ODP certificate within every 5 years.** Failure to renew requires taking a full day course and successfully completing the exam.
- Renewal forms are available on line at [www.ualocal787.org](http://www.ualocal787.org) or at [www.jtac787.org](http://www.jtac787.org)

Or at the JTAC office (and from your employer). Please fill these forms out and fax to the JTAC at least 8 weeks prior to expiry of your existing certificate. Failure to renew requires taking the full day refrigerant handling certification course and successfully completing the exam.

- Federal Halocarbon Regulations continue to apply at facilities that are under Federal jurisdiction. (abide by Federal Halocarbon Regulation 2003 available on line at the following site: <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2003-289/page-1.html>)
- Federal jurisdiction includes but are not limited to the following: banks, post office, RCMP, airports, VIA Rail, armed forces bases, telecommunication facilities and remote telecommunication sites. **If you are not sure of the jurisdiction as to whether it is Ontario or Federal, then you must clarify. Regardless, you must adhere to both regulations when working on Federal jurisdiction equipment.**

## **Contact info for the Provincial and Federal departments below:**

Ontario Spills Action Centre for emergency release reporting: 1-800-268-6060

Contact for follow up reports and requests

Director:

Operations Division

135 St. Clair Ave. W.

14th floor

Toronto ON M4W 1P5

Tel: (416) 314 – 6378

Fax: (416) 314 – 6396

Fax: (416) 314 – 6409

Investigations & Enforcement Branch

5775 Yonge Street

8th floor

North York ON M2M 4J1

Tel: (416) 326 – 6700

Fax: (416) 326 - 5256

Written notices regarding low pressure chillers:

Written notices can be submitted to:

Assistant Director, West Central Region

Ministry of the Environment

Ellen Fairclough Building

119 King Street West, 12th Floor

Hamilton ON L8P 4Y7

Federal Jurisdiction:

Manager, Emergencies and Enforcement Division

Information Management Section

Environment Canada

Environmental Protection Branch-Ontario Region

4905 Dufferin Street, 2nd Floor

Downsview, Ontario

M3H 5T4

Ph: (416) 739-5869

Fax: (416) 739-4903



## Joint Training and Apprenticeship Committee

Refrigeration Workers Local 787 - O.R.A.C. Training Fund  
419 Deerhurst Drive, Brampton, ON L6T 5K3  
Tel: 905-790-9662 Toll Free: 1-888-305-9993  
Fax: 905-790-9711 Web: [www.jtac787.org](http://www.jtac787.org)

**O.Reg. 463/10**  
**Ozone Depleting Substances**  
**Fluorocarbon Refrigerants Handling**

**ODP Certification Renewal Form**

Please print clearly and note that the Certificate will be sent to the address provided.

Name: \_\_\_\_\_

ODP Card # \_\_\_\_\_  
ODP Certificate expiry date: \_\_\_\_\_

Address: \_\_\_\_\_ Apt/Unit # \_\_\_\_\_

City: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Work Phone: \_\_\_\_\_ Home Phone: \_\_\_\_\_

Employer (optional) \_\_\_\_\_

Employer's Address \_\_\_\_\_

As per the requirements of O. Reg. 463/10 Section 34.(4)(b), a \$50 administration fee will be deducted from the member's training allowance for non-expired re-certification. New certification or expired re-certification will have an administration and material fee deduction of \$200 from the member's training allowance. *Expired certificates require that the person attend a full day certification program and pass the exam. A Passing grade of 75% is required for certification.*