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CANADIAN WIND  
ENERGY ASSOCIATION

ASSOCIATION CANADIENNE  
DE L'ÉNERGIE ÉOLIENNE

## **CANADIAN WIND RELATED EDUCATION AND TRAINING ACTIVITIES**

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There are four general types, or categories of wind training courses in Canada:

### ***Category 1 –General courses on wind and renewable energy (i.e. “Renewables 101”)***

This category refers to colleges and university programs that provide general instruction on a range of renewable energy technologies, including wind (note that these courses often address energy conservation as well). These are offered either as start-to-finish certificate programs, or as re-training courses for existing trades people. Individuals coming out of these programs do not necessarily go on to work in the wind industry.

### ***Category 2 –Technical training***

This category includes highly technical courses on wind-specific subjects (e.g. wind turbine maintenance/installation, wind farm operation, blade manufacturing, wind resource assessment etc.). Individuals graduating from these programs will almost always go on to work in the wind industry.

### ***Category 3 – Research and Development***

This includes universities and research institutions that have developed programs and facilities designed for wind-specific R&D projects and education (usually associated with Technical Universities). Graduates from these programs are usually engineers in a general field (e.g. electrical, mechanical etc.) who have some degree of specialisation in wind.

### ***Category 4 – Workshops***

This includes general interest workshops on small wind turbines and other renewable energy systems. These course usually last from one day to one week, and are attended by individuals with a personal interest in small wind systems.

**LIST OF CANADIAN WIND TRAINING COURSES – LAST UPDATED: OCTOBER 2011**

Institution	Program Title	Entry Requirements	Earns	Contact	Contacts / Scope of Program / Notes
<b>Category 1 General courses on wind and renewable energy (i.e. "Renewables 101")</b>					
<b>Holland College, Summerside, PE</b>	Wind Turbine Technician	High School Diploma or equivalent Grade 11 or 12 Physics Class 5 Drivers Licence Medical exam	Certificate	Andrew Dibling 902-888-6433 <a href="mailto:amdibling@hollandcollege.com">amdibling@hollandcollege.com</a>	<ul style="list-style-type: none"> <li>• 10 month program with annual intake in September</li> <li>• Competency Based Education</li> <li>• Strong hands-on component with lab work on turbines</li> <li>• Wind, Electrical, and mechanical theory taught and reinforced with hands-on activities</li> <li>• Focus on commercial scale turbines</li> <li>• BZEE International Certification</li> <li>• Partnership with Wind Energy Institute of Canada</li> <li>• Industry work placement</li> </ul>
<b>St. Lawrence College, Kingston ON</b>	Two programs offered: <ul style="list-style-type: none"> <li>• Energy Systems Engineering Technician (started September 2005)</li> <li>• Energy Systems Engineering Technology</li> </ul>	High school or equivalent	Energy Systems Engineering Technician Diploma, Energy Systems Engineering Technologist Diploma	Steve Lapp 613 544 5400 x 1528, <a href="mailto:slapp@ati.sl.on.ca">slapp@ati.sl.on.ca</a>	<ul style="list-style-type: none"> <li>• Duration: 2 year technician; 3 year technologist</li> <li>• Certificate program approved by Ontario Ministry of Training Colleges and Universities</li> <li>• The program develops an understanding of heating, ventilating, and air-conditioning systems with an emphasis on energy conservation and alternative energy systems for small institution, commercial and residential applications. Practical hands-on training at the onsite "Energy House" with solar air and water systems, photovoltaic systems, wind power generation, heat pumps and emerging technologies is core to the program.</li> <li>• <a href="http://www.sl.on.ca/fulltime/F1002.htm">www.sl.on.ca/fulltime/F1002.htm</a></li> <li>• <a href="http://energyhouse.ati.sl.on.ca/">energyhouse.ati.sl.on.ca/</a></li> </ul>
<b>Lambton College, Sarnia ON</b>	Alternative Energy Engineering Technology (T073) course	High school or equivalent			<ul style="list-style-type: none"> <li>• Three year program with a co-op component which will provide students with a combination of theory and application skills in current and emerging energy technologies</li> <li>• <a href="http://www.lambton.on.ca/Programs">http://www.lambton.on.ca/Programs</a></li> </ul>
<b>Seneca College, Toronto ON</b>	Integrated Energy Systems program (non-certificate)	High school or equivalent		Roy Paluoja	<ul style="list-style-type: none"> <li>• Website: <a href="http://eto.senecac.on.ca/renewable/">http://eto.senecac.on.ca/renewable/</a></li> <li>• Offered through the Centre for the Built Environment</li> <li>• Program under development</li> </ul>

Institution	Program Title	Entry Requirements	Earns	Contact	Contacts / Scope of Program / Notes
<b>Centennial College, Toronto ON</b>	Wind Energy Generation, Conversion and Control	Certification as a millwright, industrial electrician, diploma or degree in engineering.		Herb Sinnock	<ul style="list-style-type: none"> <li>Addresses both large and small wind energy systems</li> </ul>
<b>Sault College, Sault Ste. Marie ON</b>	Scheduled for Fall 2007: Wind Energy Training Centre and training related to wind energy.	See College web site for more information.	See College web site for more information.	Karen Gauthier Ph: (705) 759-2554 ext. 2485 <a href="mailto:karen.gauthier@saultcollege.ca">karen.gauthier@saultcollege.ca</a>	<ul style="list-style-type: none"> <li>Website: <a href="http://www.saultcollege.ca">www.saultcollege.ca</a></li> </ul>
<b>New Brunswick Community College Saint John, NB</b>	“Buildings, Energy and Environment” as 2 <sup>nd</sup> year option of Mechanical Engineering Technology Program	High school or equivalent	Diploma	William Stroud (Dept Head)	<ul style="list-style-type: none"> <li>2 years duration</li> <li>Focus on HVAC – wind energy is also covered but in less depth.</li> <li>Looks at Alternative Energy sources and Environmental Planning</li> <li>Nationally accredited by CTAB</li> <li><a href="http://www.nbcc.ca">http://www.nbcc.ca</a></li> </ul>
<b>Humber College, Toronto, ON</b>	Scheduled to commence F2007 or F2008 pending approvals: Sustainable Energy Technology	High school diploma	Ontario Advanced Diploma	Robert Hellier (416) 675-6622 ext. 4536 <a href="mailto:robert.hellier@humber.ca">robert.hellier@humber.ca</a>	<ul style="list-style-type: none"> <li>3 yr full time Technologist</li> <li>Combines skills and knowledge sets in building energy efficiency with renewable electricity (wind, hydro, PV, storage) and heat energy (GeoXchange, solar, co-gen) technologies.</li> <li>Develops entrepreneurial skills for graduates to succeed in a SME-driven industry.</li> <li>Program deals with the “front end” (assessment, design and project management) of building/energy systems integration.</li> <li>Each semester synergises learning outcomes through real-life and/or simulated off-grid and grid-tied projects.</li> </ul>

Institution	Program Title	Entry Requirements	Earns	Contact	Contacts / Scope of Program / Notes
<b>Willis College – Clean Energy Institute / GPEKS Constructions Inc.</b>	Wind Energy Project Feasibility Analysis	See College Web site for pre- requisite information	Willis College Wind Energy Project Feasibility Analysis Certificate of Proficiency	Frederic Pouyot Ph: (819) 775-2760 CleanEnergy@Willis College.com	<ul style="list-style-type: none"> <li>• Website: <a href="http://www.williscollege.com/International/Programs/Energy/index.html">http://www.williscollege.com/International/Programs/Energy/index.html</a></li> <li>• The Wind Energy certificate course focuses on understanding the technology and quantifying a project's benefits, returns on investment, and level of risk. Through case studies, assignments, and real projects, graduates achieve a full understanding of the factors that influence a project's success.</li> </ul>
<b>Lakeland College, Vermilion, AB</b>	Renewable Energy and Conservation Program	A working competency in basic math skills is required, as well as the ability to understand basic chemistry and physics applications. Computer competency and high speed internet is required to access course notes, and link with inter- library and on-line web resources.	Certificate	1-800-661-6490, ext 8579  <a href="mailto:recruitment@lakelandcollege.ca">recruitment@lakeland college.ca</a>	<ul style="list-style-type: none"> <li>• Website: <a href="http://www.lakelandcollege.ca">www.lakelandcollege.ca</a></li> <li>• This <b>on-line</b> certificate program covers a broad range of renewable energy alternatives currently in use or under development, including solar, wind, bio-fuel and geothermal sources.</li> <li>• Courses are delivered on-line, eight weeks at a time with the assistance of a facilitator.</li> <li>• Participants may enroll full-time and follow the sequence of courses, or enroll part-time and take selected courses of interest as offered.</li> <li>• Lakeland College also provides data for a “virtual lab” to give on-line learners hands-on experience. Visit <a href="http://www.lakelandecabin.ca">www.lakelandecabin.ca</a> for more information.</li> </ul>

**Category 2 –Technical training**

<p><b>Lethbridge College, Lethbridge, AB</b></p>	<p>Wind Turbine Technician</p>	<p>High School Diploma or equivalent with minimum of Math 20A (Applied), English 30 -1 or 30-2, plus 10 high school science credits. Good Physical condition, Drivers License, not fear of heights, eligible for passport.</p>	<p>Program Certificate, BZEE Certificate, 1<sup>st</sup> Year Electrical Apprenticeship, Workplace Safety Certificates, High Angle Rescue Certification</p>	<p>Greg Peterson, Program Administrator, 403-320-3319, <a href="mailto:g.peterson@lethbridgecollege.ca">g.peterson@lethbridgecollege.ca</a></p>	<p>-1 year certificate program – running since 2005-international students have completed - annual intakes in September, January and May                  - Modern shop facilities complete with training tower have wind turbine nacelles and equipment, as well as diagnostic and troubleshooting equipment.                  -Career opportunities include work as Wind Turbine Technician, working on wind farm construction, and wind farm manufacturing                  - Will allow you the choice of working in the wind turbine industry and/or continuing to work toward journeyman electrician certification                  - The combined 1<sup>st</sup> year Electrical, BZEE Wind Turbine and Safety certification could provide you with employment opportunities throughout the world</p> <p><a href="http://www.Lethbridgecollege.ca/iwea">http://www.Lethbridgecollege.ca/iwea</a></p>
<p><b>Northern Lights College</b></p>	<p>Wind Turbine Maintenance Technician</p>	<p>Grade 10 Transcript or 70% on Wind Turbine Assessment</p>	<p>Certificate in Wind Turbine Maintenance</p> <p>BC Level 1 Electrical Apprenticeship Technical Training</p> <p>BC Level 1 Millwright Apprenticeship Technical Training</p> <p>Workplace Safety Certificates</p> <p>BZEE Curriculum Knowledge</p>	<p>Howard Mayer Dean, Business, Industry &amp; Contract Training</p> <p><a href="mailto:hmayer@nlc.bc.ca">hmayer@nlc.bc.ca</a></p> <p>250-784-7505</p>	<p>This one year career technical certificate program provides instruction in the British Columbia Level 1 Electrical Apprenticeship and Level 1 Millwright Apprenticeship Technical training.</p> <p>In addition students receive all safety and certification courses related to the Wind Turbine Industry.</p> <p>Students are instructed in the BZEE curriculum required for certification to the European training standard for Wind Turbines. Graduates are well prepared as entry-level Wind Turbine technicians.</p>

<b>Groupe Collegia, CEGEP de la Gaspésie et des Îles de la Madeleine</b>	<p>Three courses offered:</p> <ul style="list-style-type: none"> <li>• Wind turbine maintenance</li> <li>• Instrumentation, automation and robotics</li> <li>• Wind turbine operations and maintenance post graduate program</li> </ul>		Attestation of collegial studies (ACS)	Bernard Hamilton bhamilton@collegia.qc.ca	<ul style="list-style-type: none"> <li>• <a href="http://www.collegia.qc.ca/gaspe/maint_eolien.htm">http://www.collegia.qc.ca/gaspe/maint_eolien.htm</a></li> <li>• The graduate program is designed for graduates in mechanics and/or electronics, duration 21 weeks.</li> </ul>
<b>Category 3 – University Programs / R&amp;D</b>					
<b>University of Waterloo</b>	<ul style="list-style-type: none"> <li>• Green Energy Research Institute</li> <li>• Sustainable Technology Education Project</li> </ul>			David Johnson	<ul style="list-style-type: none"> <li>• Professors conduct research on wind and other technologies</li> <li>• Developing a “Wind Energy Research Facility”</li> <li>• Seeking partnerships with industry on blade design, power electronics</li> </ul>
<b>University of New Brunswick</b>	<ul style="list-style-type: none"> <li>• Works with AWTs</li> <li>• No specific programs offered</li> </ul>			Liuchen Chang	<ul style="list-style-type: none"> <li>• Currently, the researchers at the University of New Brunswick are focusing on the development of innovative power electronic converters and advanced control strategies for variable speed wind turbine systems.</li> </ul>
<b>Université du Québec à Rimouski</b>	<ul style="list-style-type: none"> <li>• Programme court de 2ème cycle en Gestion de Projet et Énergie Éolienne</li> </ul>			Jean-Louis Chaumel <a href="mailto:lesvents@globetrotter.net">lesvents@globetrotter.net</a>	<p>Deux cours seront accessibles dès Janvier 2006 :</p> <ul style="list-style-type: none"> <li>• MGP 7121 Planification et contrôle opérationnels de projet. Dispensé à Rimouski (et Lévis), vous rejoindrez un groupe d'étudiants de la maîtrise en Gestion de Projets.</li> <li>• GEN 46502 Aspects généraux des technologies de l'éolien. Dispensé à Rimouski, mais cumulé avec les sessions intensives prévues en Février et Mars.</li> <li>• <a href="http://www.uqar.ca/chaumel/progcourteolien.htm">http://www.uqar.ca/chaumel/progcourteolien.htm</a></li> </ul>
<b>McGill University</b>	<ul style="list-style-type: none"> <li>• wind engineering course</li> </ul>			Ahmad Hemami <a href="mailto:ahmad.hemami@mcgill.ca">ahmad.hemami@mcgill.ca</a>	<ul style="list-style-type: none"> <li>• Wind engineering course offered through the Dept of Mechanical Engineering.</li> </ul>

<b>McMaster University</b>	<ul style="list-style-type: none"> <li>McMaster Institute for Energy Studies (MIES)</li> <li>Graduate Education, Faculty of Engineering</li> </ul>			David Jackson <a href="mailto:jacksond@mcmaster.ca">jacksond@mcmaster.ca</a>	<ul style="list-style-type: none"> <li>Research on vertical axis wind turbines</li> <li>Industrial partners include Cleanfield Energy</li> <li><a href="http://energy.mcmaster.ca">http://energy.mcmaster.ca</a></li> </ul>
<b>Memorial University of Newfoundland</b>	<ul style="list-style-type: none"> <li>M.Eng Electrical Engineering with Research into control of renewable energy systems</li> </ul>	B.Sc. in Electrical Engineering		Tariq Iqbal <a href="http://www.engr.mun.ca/~tariq">http://www.engr.mun.ca/~tariq</a>	<ul style="list-style-type: none"> <li>Research and development about control and instrumentation of renewable energy systems</li> <li>Offers a graduate course on Renewable Energy Systems</li> <li><a href="http://engr.mun.ca/~tariq/res.htm">http://engr.mun.ca/~tariq/res.htm</a></li> <li><a href="http://www.engr.mun.ca/">http://www.engr.mun.ca/</a></li> </ul>
<b>Category 4 – Workshops</b>					
<b>True North Workshops,</b> Ferndale, ON				Dave Cooke	<ul style="list-style-type: none"> <li>Hands-on training on small wind systems</li> <li><a href="http://www.truenorthpower.com/training.htm">http://www.truenorthpower.com/training.htm</a></li> </ul>
<b>Selkirk College</b> Kootenay Valley, BC	Renewable energy including sessions on wind energy (offered periodically)	-	-	Robert Macrae, e-mail : <a href="mailto:RMacrae@selkirk.ca">RMacrae@selkirk.ca</a>	<ul style="list-style-type: none"> <li>Selkirk College is in the process of renovating a farm house on campus that will feature an earth energy heating and cooling system.</li> </ul>
<b>Kortright Centre,</b> Downsview ON				Alex Waters, Manager (905) 832-2289, <a href="mailto:awaters@trca.on.ca">awaters@trca.on.ca</a>	<ul style="list-style-type: none"> <li>Contact:</li> <li>Website: <a href="http://www.trca.on.ca">www.trca.on.ca</a></li> <li>Hands-on training on small wind and PV systems</li> </ul>
<b>Wind Queries,</b> Pincher Creek, AB	Range of courses			Terry and Susan Aris <a href="mailto:staris@telus.net">staris@telus.net</a>	<ul style="list-style-type: none"> <li>Offers range of courses from a 2 day technical course that bring in techs from the wind energy companies to short half day intro course including access to turbines.</li> </ul>

<b>Ontario Sustainable Energy Association (OSEA),</b> Toronto ON	On-demand workshops and technical assistance on various elements of project development, such as business plan development, financing, project management, marketing, etc.	-		Melinda Zytaruk Tel: 416-977-4441 <a href="mailto:melinda@ontario-sea.org">melinda@ontario-sea.org</a>	<ul style="list-style-type: none"> <li>Also facilitates day long animation workshops for communities interested in developing projects, general workshops about renewable energy technology and its applications as well as specific workshops on policy and implementation frameworks. While many of our workshops are targeted at our members, many are also open to the general public and we also offer some to industry participants as well.</li> <li><a href="http://www.communitygreenpower.org">www.communitygreenpower.org</a></li> </ul>
<b>New Brunswick Community College Saint John, NB</b>	Offers “Buildings, Energy and Environment” as 2 <sup>nd</sup> year option of Mechanical Engineering Technology Program	high school or equivalent	Diploma		<ul style="list-style-type: none"> <li>Contact William Stroud (Dept Head)</li> <li>Nationally accredited by CTAB</li> <li>Focus on HVAC</li> <li>Looks at Alternative Energy sources and Environmental Planning</li> </ul>
<b>Power Courses Ltd, Calgary, AB</b>	Alberta Wind Development Course			David Butler (403) 606-0973	<p>Course is meant for people who want a good understanding of how wind projects are developed. This new one day course will be taught by four instructors. The course will cover: Site Selection, Equipment Selection, Interconnection Process, Regulatory Process, Financing Sources, Sale of Power and CO2 Credits, Economics - Wind Spreadsheet Model, Issues for ISO.</p> <p>Please visit <a href="http://www.Powercourses.ca">www.Powercourses.ca</a> for more information.</p>
<b>Oak Leaf Energy Training, Calgary, AB</b>	Fundamentals of Wind Energy			Jon Rozhon <a href="mailto:jwr@oakleaftraining.com">jwr@oakleaftraining.com</a> 403-457-0260	<p>This one-day course provides participants with the industry basics</p> <ul style="list-style-type: none"> <li>- Wind as an Energy Resource</li> <li>- Wind Power Generation &amp; Present State of Technology</li> <li>- Building a Wind Power Farm</li> <li>- Economic Analysis of Wind Power Projects</li> <li>- Technical Issues - Wind Farm Integration</li> <li>- Wind Integration Cost</li> <li>- Wind Variability Management</li> <li>- See <a href="http://www.oakleaftraining.com">www.oakleaftraining.com</a> for information on this and other energy courses.</li> </ul>