



CANADIAN WIND RELATED EDUCATION AND TRAINING ACTIVITIES

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: JUNE 2007

Institution	Program Title	Entry Requirements	Earns	Contact	Description of program
Category 1 General courses on wind and renewable energy (i.e. "Renewables 101")					
The University of Alberta	Energy Studies				- Energy Studies is a new course that explores conventional, and, at times, controversial methods of generating and using energy, while devoting equal attention to the benefits and possibilities of alternative fuels, including their limitations. This short course will be held August 13-24 2007 on the main campus of the University of Alberta. www.engineering.ualberta.ca/MECE
College, Sarnia ON	Alternative Energy Engineering Technology (T073) course	High school or equivalent	Advanced diploma in Alternative Energy Engineering Technology	Shahram Karimi, shahram.karimi@lambton.on.ca	- 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. http://www.lambton.on.ca/Programs
Douglas College, New Westminster BC	Building Environmental Systems Training for Building Operators	High School or relevant work experience	Certificate and/or Citation	Brian Miltimore, 604.527.5224 email: miltimoreb@douglas.bc.ca	- Two year part time program for working adults centred on three major components, one of which is energy management and renewable utility technologies.
St. Lawrence College, Kingston ON	Two programs offered: - Energy Systems Engineering	High school or equivalent	Energy Systems Engineering Technician Diploma, Energy	Steve Lapp 613 544 5400 x 1528, slapp@ati.sl.on.ca	- Duration: 2 year technician; 3 year technologist - Certificate program approved by Ontario Ministry of Training Colleges

	Technician (started September 2005) - Energy Systems Engineering Technology		Systems Engineering Technologist Diploma		and Universities - 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. www.sl.on.ca/fulltime/F1002.htm energyhouse.ati.sl.on.ca/
Seneca College, Toronto ON	Integrated Energy Systems program (non-certificate)	High school or equivalent		Roy Paluoja	- Website: http://eto.senecac.on.ca/renewable/ - Offered through the Centre for the Built Environment Program under development
Centennial College, Toronto ON	Wind Energy Generation, Conversion and Control	Certification as a millwright, industrial electrician, diploma or degree in engineering.		Herb Sinnock	- Addresses both large and small wind energy systems
Sault College, Sault Ste. Marie ON	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 karen.gauthier@saultcollege.ca	- Website: www.saultcollege.ca - November 8, 2005, announced a \$1,120,000 investment to develop a new Wind Energy Training Centre. The Wind Energy Training Centre, scheduled for Fall 2007, will include a fully operational pilot scale wind turbine and training facility.

New Brunswick Community College Saint John, NB	Buildings, Energy and Environment” as 2 nd year option of Mechanical Engineering Technology Program	High school or equivalent	Diploma	William Stroud (Dept Head)	<ul style="list-style-type: none"> - 2 years duration - Focus on HVAC – wind energy is also covered but in less depth. - Looks at Alternative Energy sources and Environmental Planning - Nationally accredited by CTAB http://www.nbcc.ca
Humber College, Toronto, ON	Will commence in Sept 2008 as Sustainable Energy & Building Technology (SEBT) program	High school or equivalent	Ontario Advanced Diploma	Robert Hellier (416) 675-6622 ext. 4536 robert.hellier@humber.ca	<ul style="list-style-type: none"> - 3 yr full time Technologist - Combines skills and knowledge sets in building energy efficiency with renewable electricity (wind, hydro, PV, storage) and heat energy (GeoXchange, solar, co-gen) technologies. - Develops entrepreneurial skills for graduates to succeed in a SME-driven industry. - Program deals with the “front end” (assessment, design and project management) of building/energy systems integration. - Each semester synergises learning outcomes through real-life and/or simulated off-grid and grid-tied projects.

Institution	Program Title	Entry Requirements	Earns	Contact	Description of program
Category 2 – Technical Training					
Selkirk College	Renewable Energy Technology Program			Robert Macrae Tel:250-365-1441	<ul style="list-style-type: none"> - The first part is the six month Entry Level Trades Training (ELTT) Electrical Program which is the first year of an electrical apprenticeship in BC. The ELTT Electrical Program

					<p>starts Sept. 2007 to the end of February, 2008.</p> <ul style="list-style-type: none"> - The second component of the Selkirk College Renewable Energy Technology program includes wind power in addition to small hydro, solar PV, solar thermal, geo-exchange, and biomass renewable energy systems. The program also addresses energy conservation, renewable energy system design, permitting, system integration and control, installation, and maintenance of renewable energy systems.
<p>Lethbridge College, Lethbridge, Alberta</p>	<p>Pre Employment Electrician/Wind Turbine Technician</p>	<p>High School Diploma with pass mark in Math 23 or equivalent, and at least 10 credits in high school science (or pass electrician entrance exam)</p>	<ul style="list-style-type: none"> - First Year Alberta Electrical Apprenticeship Technical Training - Pre Employment Electrician/Wind Turbine Technician Letter of Recognition - Workplace Safety Certificates - Safety and Skills Development Passport 	<p>Greg Peterson Ph: (403)320-3319 g.peterson@lethbri.dgecollege.ab.ca</p>	<ul style="list-style-type: none"> - 26 weeks - First program began in April 2005 - Program is offered in September 2007 and January 2008 (limited enrolments are available) - BZEE certified instructors (European training standard for wind turbines) - Wind farm on -the-job training - Comprehensive wind farm safety training and certification - Wind turbine operation, maintenance and construction training - Future program developments include: windfarm development and management studies, blade repair and offshore maintenance and operations.

Groupe Collegia, CEGEP de la Gaspésie et des Îles de la Madeleine	Three courses offered: - Wind turbine maintenance - Instrumentation, automation and robotics - Wind turbine operations and maintenance post graduate program		Attestation of collegial studies (ACS)	Bernard Hamilton Bhamilton @collegia.qc.ca	- The ACS program in Wind turbine maintenance, which lasts 1,395 hours, began in Gaspé on July 5, 2004 (first graduates in September 2005). - French only – course is being translated into English http://www.collegia.qc.ca/gaspe/main_t_eolien.htm - The graduate program is designed for graduates in mechanics and/or electronics, duration 21 weeks.
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Category 3 – University Programs/ R&D					
University of Waterloo	- Green Energy Research Institute - Sustainable Technology Education Project			David Johnson	- Professors conduct research on wind and other technologies - Developing a “Wind Energy Research Facility” - Seeking partnerships with industry on blade design, power electronics
University of New Brunswick	- Works with AWTS - No specific programs offered			Liuchen Chang	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.
Université du Québec à Rimouski	Programme court de 2ème cycle en Gestion de Projet et Énergie Éolienne			Jean-Louis Chaumel lesvents@globetrotter.net	Deux cours seront accessibles dès Janvier 2006 : - MGP 7121 Planification et contrôle opérationnels de projet. Dispensé à

					<p>Rimouski (et Lévis), vous rejoindrez un groupe d'étudiants de la maîtrise en Gestion de Projets.</p> <ul style="list-style-type: none"> - GEN 46502 Aspects généraux des technologies de l'éolien. Dispensé à Rimouski, mais cumulé avec les sessions intensives prévues en Février et Mars. <p>http://www.uqar.ca/chaumel/progcou rteolien.htm</p>
McGill University	Wind engineering course			Ahmad Hemami ahmad.hemami@mcgill.ca	<ul style="list-style-type: none"> - Wind engineering course offered through the Dept of Mechanical Engineering.
McMaster University	<ul style="list-style-type: none"> - McMaster Institute for Energy Studies (MIES) - Graduate Education, Faculty of Engineering 			David Jackson jacksond@mcmaster.ca	<ul style="list-style-type: none"> - Research on vertical axis wind turbines - Industrial partners include Cleanfield Energy <p>http://energy.mcmaster.ca</p>
Memorial University of Newfoundland	<ul style="list-style-type: none"> - M.Eng Electrical Engineering with Research into control of renewable energy systems 	B.Sc. in Electrical Engineering		Tariq Iqbal http://www.engr.mun.ca/~tariq	<ul style="list-style-type: none"> - Research and development about control and instrumentation of renewable energy systems - Offers a graduate course on Renewable Energy Systems - http://www.engr.mun.ca/~tariq/res.htm - http://www.engr.mun.ca/

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Category 4 - Workshops					
True North Workshops, Ferndale, ON				Dave Cooke	- Hands-on training on small wind systems - http://www.truenorthpower.com/training.htm
Kortright Centre, Downsview ON				Alex Waters, Manager (905) 832-2289, awaters@trca.on.ca	- Contact: - Website: www.trca.on.ca - Hands-on training on small wind and PV systems
Wind Queries, Pincher Creek, AB	Range of courses			Terry and Susan Aris staris@telus.net	- 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.
Ontario Sustainable Energy Association (OSEA), 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 melinda@ontario-sea.org	- 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. www.communitygreenpower.org
New Brunswick Community College Saint John, NB	Offers "Buildings, Energy and Environment" as 2 nd year option of Mechanical Engineering	high school or equivalent	Diploma		- Contact William Stroud (Dept Head) - Nationally accredited by CTAB - Focus on HVAC - Looks at Alternative Energy sources and Environmental Planning

	Technology Program				
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