

Course Structure and Costs

IBEX is split into two courses. ENVR-801 Energy Management Fundamentals covers modules 1-6. ENVR-802 Energy Management Practices covers the remaining 10 modules and the final audit.

ENVR-801 Tuition \$1,000

Sign up **before August 31** and pay an **Early Bird price** of only **\$400** on Energy Management Fundamentals!

ENVR-802 Tuition \$2,000

New Group Rate! For three or more people, from one organization, we are offering a **15% discount** (for ENVR-802 only); Groups register by **phone or email**. This offer is for the length of the program. Please contact Lynda for more information (see back panel for contact details).

About the Centennial Energy Institute (CEI)...

Centennial College's School of Engineering Technology & Applied Science (SETAS) launched the Centennial Energy Institute (CEI) in October 2006.

The CEI is dedicated to the adoption of a culture of conservation in Canada and the development of low-carbon, distributed energy generation. It conducts research, training, outreach and consultancy in the following areas:

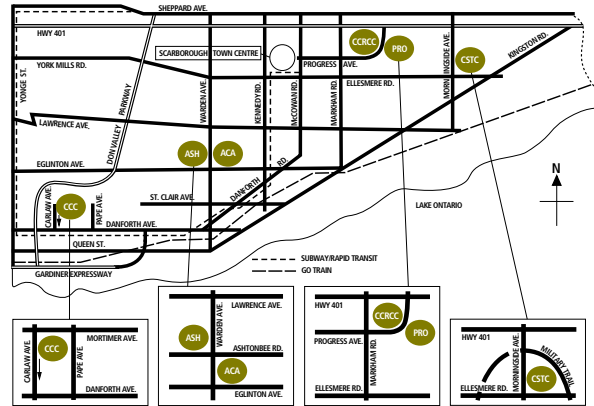
- Energy awareness and capacity building
- Energy efficiency and conservation
- Energy systems integration and reliability
- Energy supply and demand management
- Third party testing and verification
- Energy standards and policy

The CEI supports Centennial's Energy Systems Engineering Technology diploma program. It is able to leverage faculty and student teams from this and other college programs in projects it undertakes. If you have specific needs, CEI is able to tailor its training to your requirements.



Where is the CEI Located?

The Centennial Energy Institute conducts its operations out of Centennial College's Progress campus (PRO), located in Toronto's East end.



Contact Us

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Registration

<http://db2.centennialcollege.ca/ce/certdetail.php?CertificateCode=7425>

Please note: Groups of three or more should contact Lynda O'Malley by phone or email lomalley@centennialcollege.ca to register.

COLLEGE
TRAINING

Industrial & Building Energy eXpertise
Online Training for Energy Efficiency



Project Partners:

Canadian Institute for Energy Training (CIET)
LeapFrog Energy Technologies
Sustainable Resources Management (SRM)

Funded by:

OPA
Ontario Power Authority

10/06

Want to know more about IBEX?

Visit: www.centennialcollege.ca/cei/ibex or www.energyinstitute.ca

The FUTURE of LEARNING

centennialcollege.ca

What IBEX delivers to your company

Are you a business owner looking to improve your bottom line through increased energy efficiency? Have you considered energy audits or conservation programs but don't have anyone to take a leadership role internally?

- Groom one or more of your staff to acquire high calibre energy management skills
- They can train without being away from work for days on end
- They will acquire knowledge on the latest energy and water efficiency technologies
- Begin a continuous improvement process to reduce energy costs
- Prepare your facilities to comply with Green Energy Act provisions
- Work more effectively with energy consultants and vendors

By enrolling your facilities, purchasing, production or maintenance managers or supervisors in IBEX, your company will acquire knowledge on energy & water saving technologies, energy auditing and the business case for energy projects, as well as discover how to access funding. As part of the IBEX training, your delegate may lead a mentored audit of your facility and produce recommendations specific to it.

Is IBEX right for you?

Are you looking for a way to enter the energy management field? Have you been thinking of ways to help a company save in energy costs but don't have all the technical and business skills to make the case to the company's leadership? IBEX can provide you with what you need.

- Offered by Centennial College, a leader in energy training
- Based on a proven curriculum
- Online, self-paced for busy people
- Supplemented with individual attention and mentoring

IBEX online energy management training is based on the UK Energy Institute's Training in Energy Management through Open Learning (TEMOL) program. It has been carefully adapted to the Canadian context and combines technical knowledge with energy assessment skills and business practices, comprising the core skill-set for energy managers. By performing a final audit at your company's (or a client's) facility, your company will access conservation incentive programs and achieve energy and water savings as a direct result of your training.

IBEX Module Descriptions

Module	Description
Part One: Energy Management Fundamentals	Part One consists of six modules that provide a basic technical understanding of energy utilization, for both electrical and fuel based systems
An Introduction to Fuel Types	Fuel types, combustion, thermodynamics and secondary energy systems
Principle of Fuel Combustion	Stoichiometric and real combustion conditions, flame temperature and combustion efficiency
Combustion Equipment and Practice	Combustion technologies, from simple gas burners to combustion systems used in industry
Electrical Energy Basics	A comprehensive overview of electrical energy, including definitions, metering, devices, conducting an assessment and use of CALC and LOAD software tools
Heat Transfer Fundamentals	Thermal energy and thermodynamic principles. Temperature scales, internal energy, enthalpy and phase changes
Mechanisms of Heat Flow	Conduction, convection, and radiation as mechanisms of heat flow in energy management applications. Properties of materials and characteristics of thermal systems.
Part Two: Energy Management	In Part Two, the emphasis is on the "management side" of the issue. The skills and knowledge required by an energy manager, and the tasks that need to be carried out in order to achieve energy efficiency improvements, are developed.
Energy Measurement and Management Systems	If you can't measure it, you can't manage it. Types and use of energy instrumentation, from simple hand-held devices to building energy management systems.
Energy and the Environment	Pollution control related to energy systems, in the context of economic factors and legislation
Water Efficiency	The connection between water conservation measures and energy efficiency. Assessing facility water use and measuring water efficiency using AQUAUDIT software
An Overview of General Energy Utilization	Linking technical aspects to management functions. The technical role of the energy manager, including checklists for managing people, equipment and services.
Management Techniques for the Energy Manager	The human element in energy management: how to create awareness, "buy-in", and accountability.
Developing the Financial Case	Data collection and the preparation and analysis of cash flow statements for energy managers, key financial concepts, risk sensitivity and analysis.
Energy Auditing	The energy audit process, its rationale and key elements.
Energy Costs, Rate Structures and Scheduling	Rate structures for gas and electricity, tariffs, demand, consumption, power factor, load profiles and scheduling.
Energy Monitoring and Targeting	Choosing, gathering, analysis and reporting of information. Statistical approaches: Using degree days and regression analysis.
Energy Efficiency	Cost effectiveness and appropriateness of energy sources, individual responsibilities, and organizational functions to set and achieve energy efficiency goals.