



**School of Construction
and the Environment**

Sustainable Energy Management Program (SEMAC)

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C.E.M.

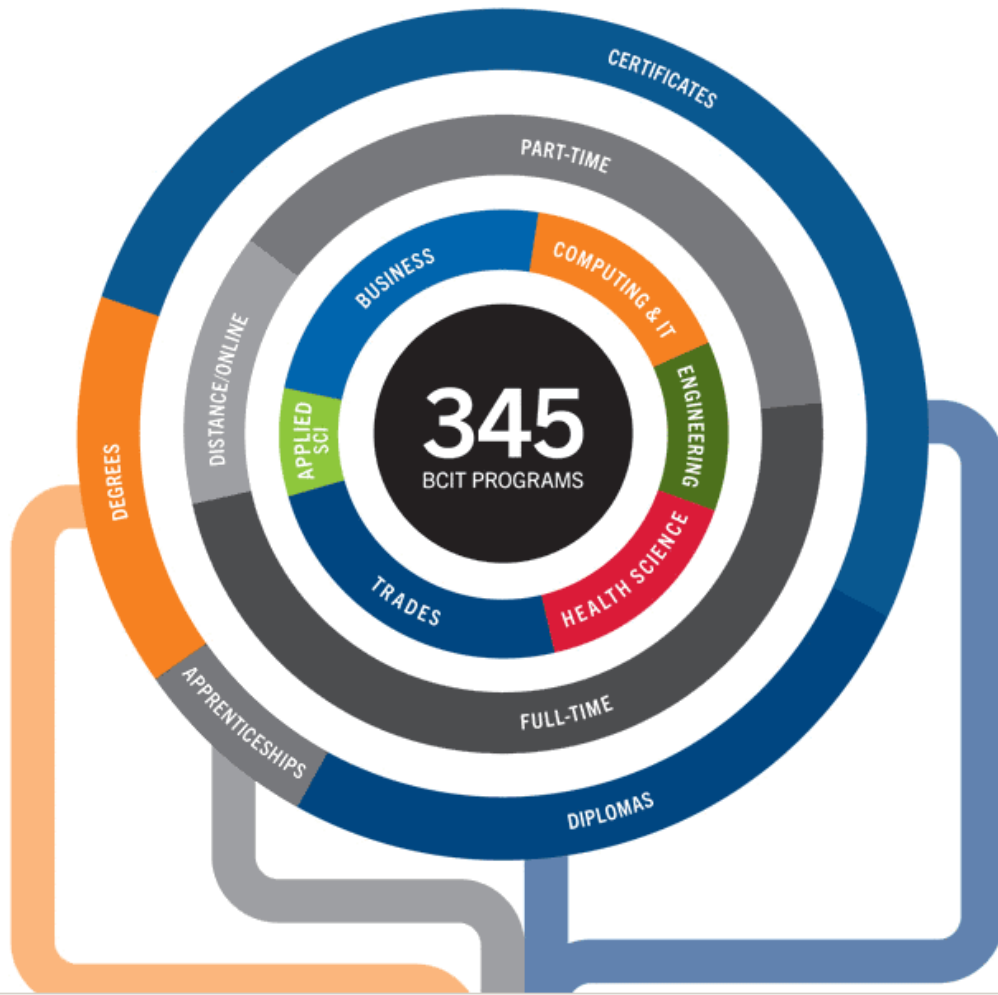
Program Head



Content

- Intro to BCIT
- CESA and Factor Four
- SEMAC program
 - How it got to where it is
 - What it is
 - Careers
- The future of EM Education

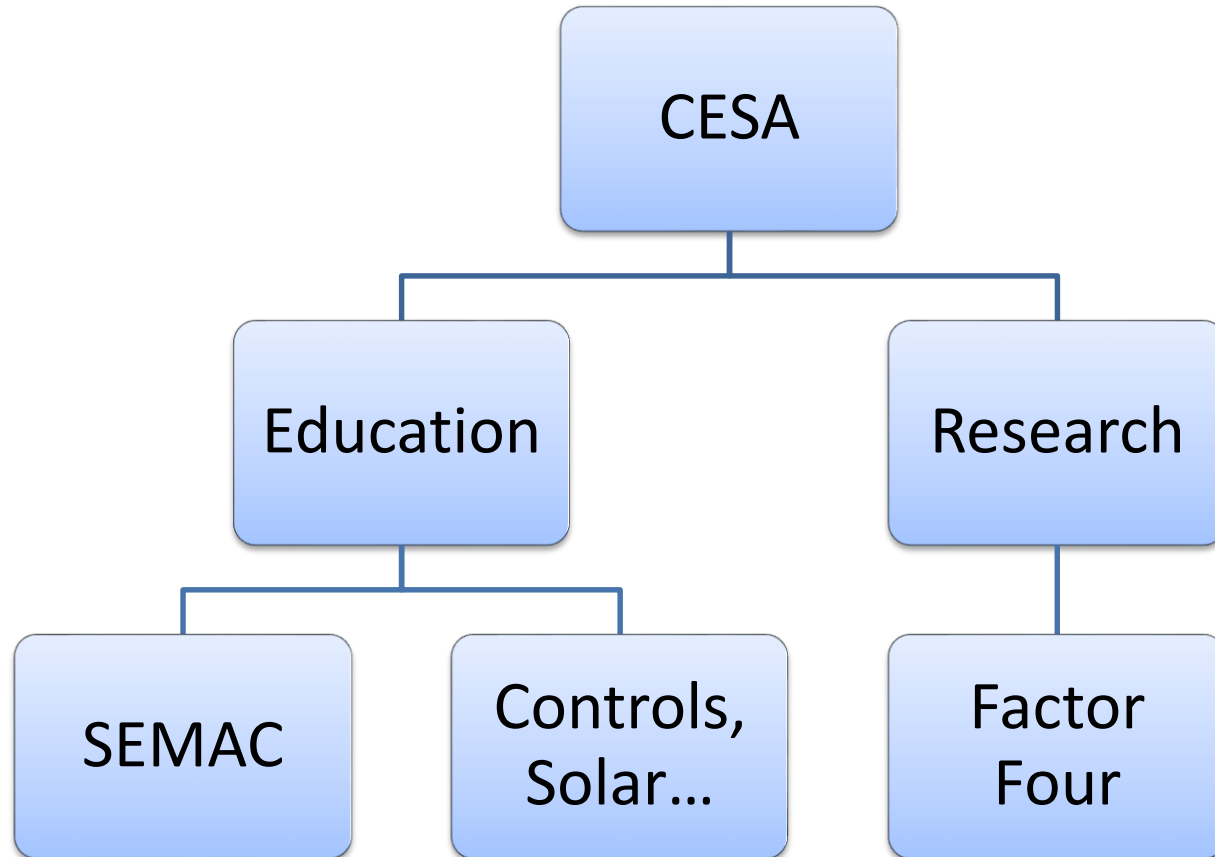




BCIT is one of British Columbia's largest post-secondary institutions with more than 48,000 students enrolled annually (16,600 full-time, 31,600 part-time).

Center for Energy Systems Applications (CESA)

<http://commons.bcit.ca/energy/>



BCIT's SoCE Energy Team

- Andrea Linsky
 - Program Head for SEMAC
- Alexandre Hebert
 - BCIT's Energy and Sustainability Manager
- Chris Lum
 - BCIT's Energy Specialist

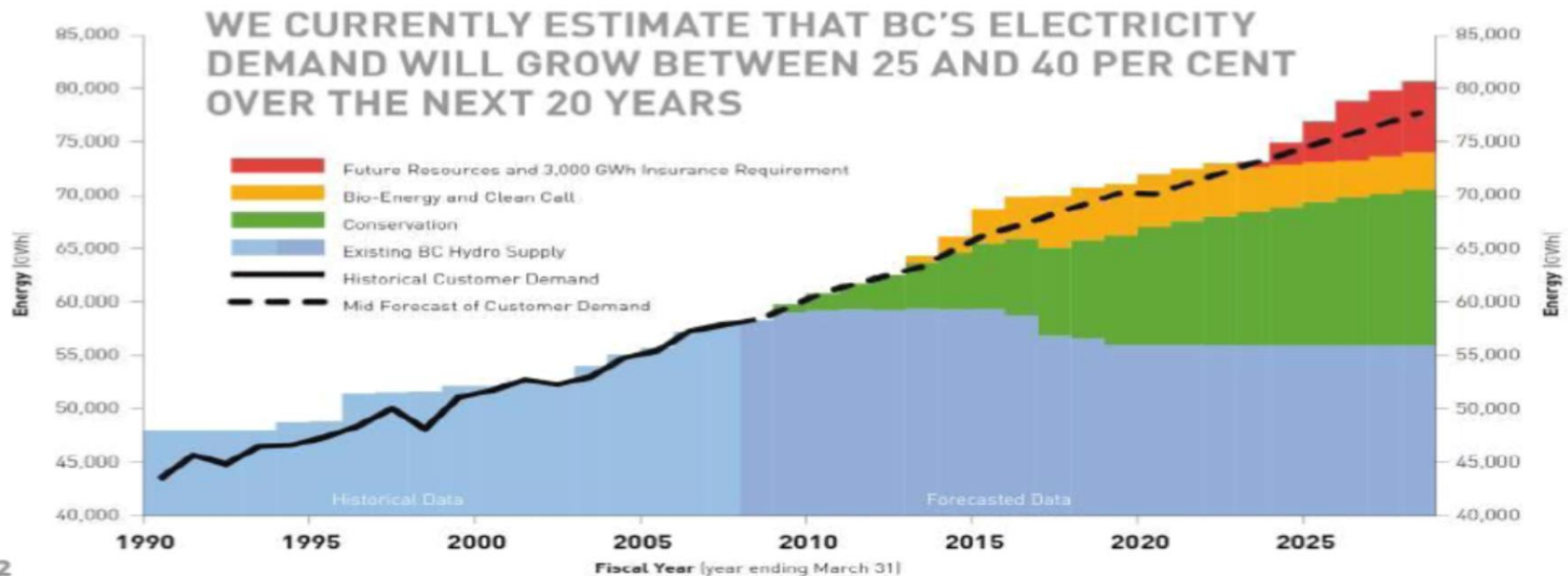
NOTE: They are all SEMAC Grads!

Why create a program dealing with Energy Management?

Specifically on Demand Side Energy Management

... and what is demand side management?

BC's electricity gap is growing



- B.C.'s energy demand could increase by up to 40 per cent
- The provincial government has set a goal of fulfilling two thirds of the new energy demand through conservation by 2020 (BC Hydro say 77%)
- Legislated to be a carbon-neutral public sector as of 2010

SEMAC Program – How we got to this point

- BC Hydro was having some difficulty in finding enough qualified people to fill the current and proposed Energy Manager positions
- Approached BCIT to create a program (2007)
- Through the financial support of BC Hydro and NRCAN – OEE ,a team was gathered to put together the program
 - BCIT, BC Hydro, SME's, EM's

SEMAC Program – How we got to this point

- The team worked to put together a proposed curriculum and concept paper by October 2008
- First cohort started March 2009
- In 2011 the program went through a change from a Associate Certificate to a Advanced Certificate
- In 2013/2014 the program was moved fully online

The SEMAC program

- 9 courses forming an Advanced Certificate
 - 356 hours in length
- Taught online in a part time studies format
 - 1.5 or 2.5 years- one night a week of webinar classes
- One cohort intake per year
- 4.5 “technical” courses
- 4.5 “business” courses

SEMAC Program

September 2015 cohort

- Fully online program
- Designed to educate people anywhere in the world with more and more individuals applying from out of province
- Starts September with a “in person” session

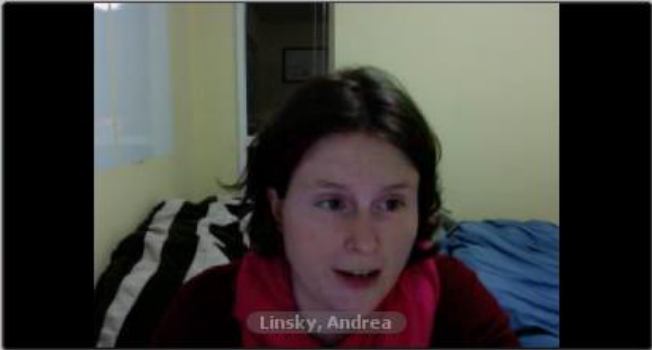
Courses

- CESA 5100 - Energy Basics
- CESA 5300 - Energy Systems
- CESA 5400 - Operations Management
- CESA 5500 - Codes and Standards
- CESA 5600 - Energy Audit
- CESA 5700 - Decision Making
- CESA 5800 - Change Management
- CESA 5850 - Strategic Planning for Energy Management
- CESA 5900 - Project Development

What is class like?

- Typically students will log in at a scheduled time to participate in a lecture or class discussion
- Students will work on the course material, participate in discussion forums, complete assignments and quizzes at set intervals.
- Students can directly contact the instructor for specific questions or assistance

AUDIO & VIDEO



Linsky, Andrea

PARTICIPANTS

MAIN ROOM (21)

Linsky, Andrea
Moderator

Arthur, Nicola

Beaubier, Jessica

Chiem, Bien

Doyle, Aaron

Garcia, Carlos

CHAT

Munn, Cole
refinery
7:17 PM

Garcia, Carlos
docks? shipyards
7:19 PM

Tudose, Alexandra
street lights
7:20 PM

pump stations
7:21 PM

Munn, Jonathan
works/ roads
7:21 PM

Fit Page

Assignment 3 - Inbox

Assignment 3 - Inbox

- Due March 27, 2015
- First 4/20² grades can now be complete!
 - Description of Jean.
 - Answer to first email.
 - Think about your application... every answer should be different.

School of Construction and the Environment

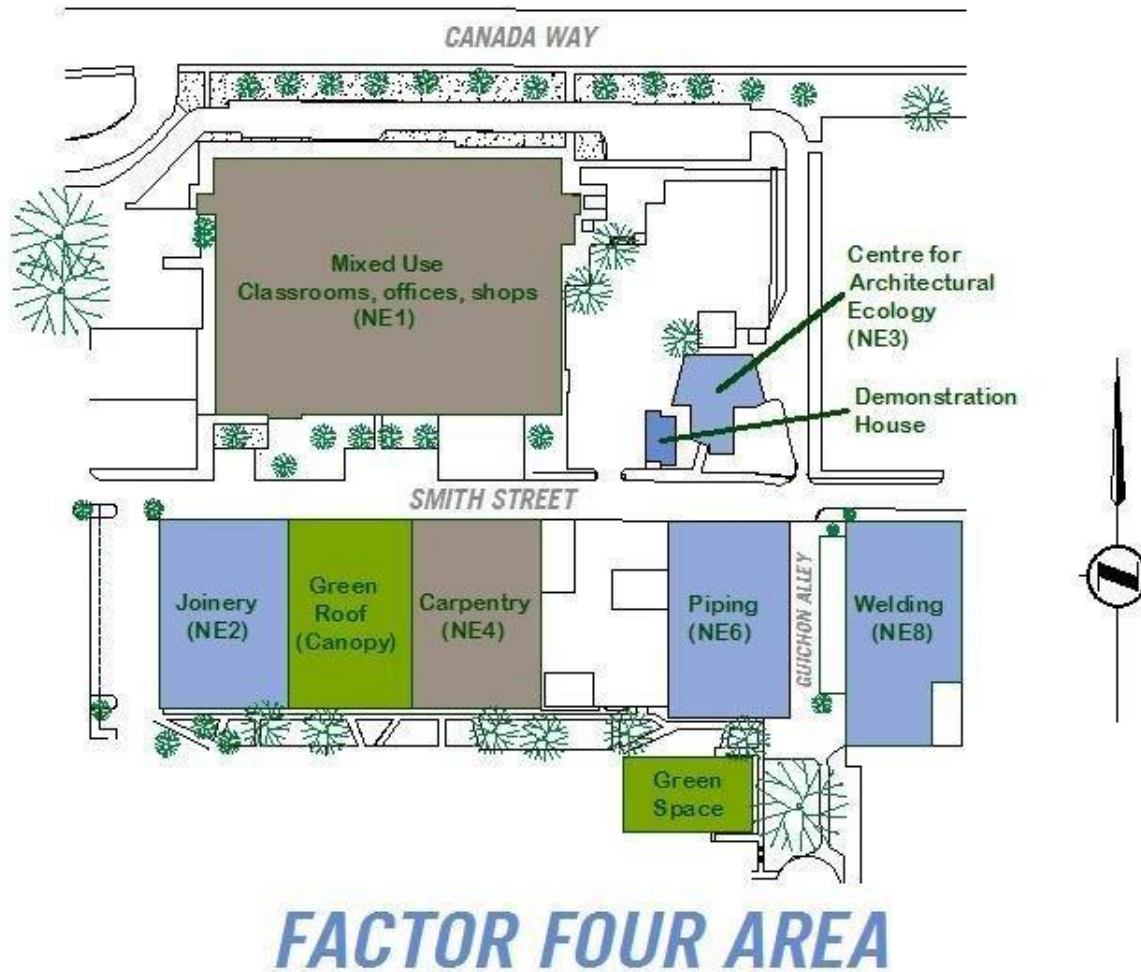
bcit.ca/construction

Main Room @ 0:00.293

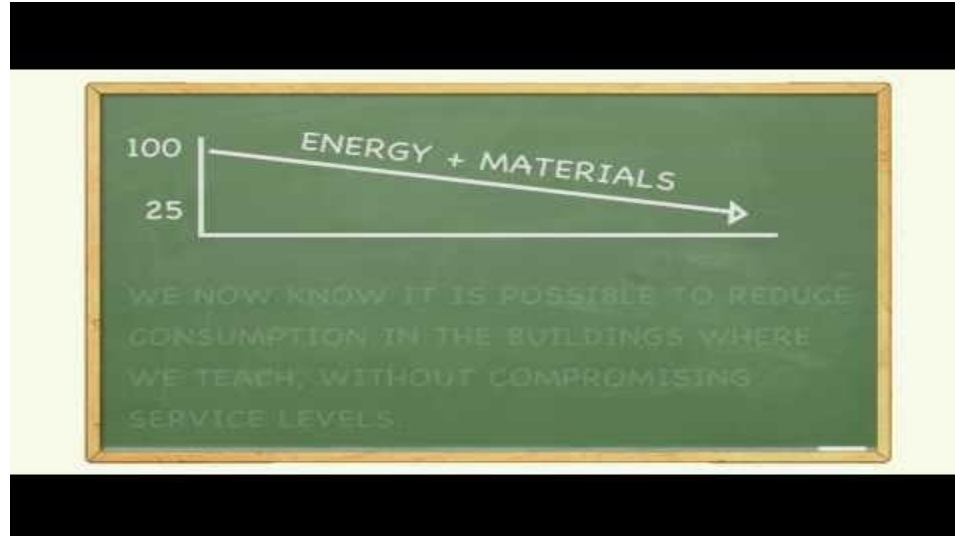
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Research Partnership



Factor Four



<https://youtu.be/5Em75vIHDdM>

Benefits of Partnership

- Access to current data and project analysis
- A “home base” for a otherwise relatively abstract program, because of its online nature
- A chance to be part of a bigger question and to bring this into your career

<http://commons.bcit.ca/factorfour/soce/>

Successes

- As off January 2015, we have graduated 7 cohorts (groups) from the SEMAC program
- Graduates are working as an EM or ES within organizations such as
 - Major corporations
 - Post Secondary institutions
 - Municipalities
 - School Districts
 - Health Authorities



Successes

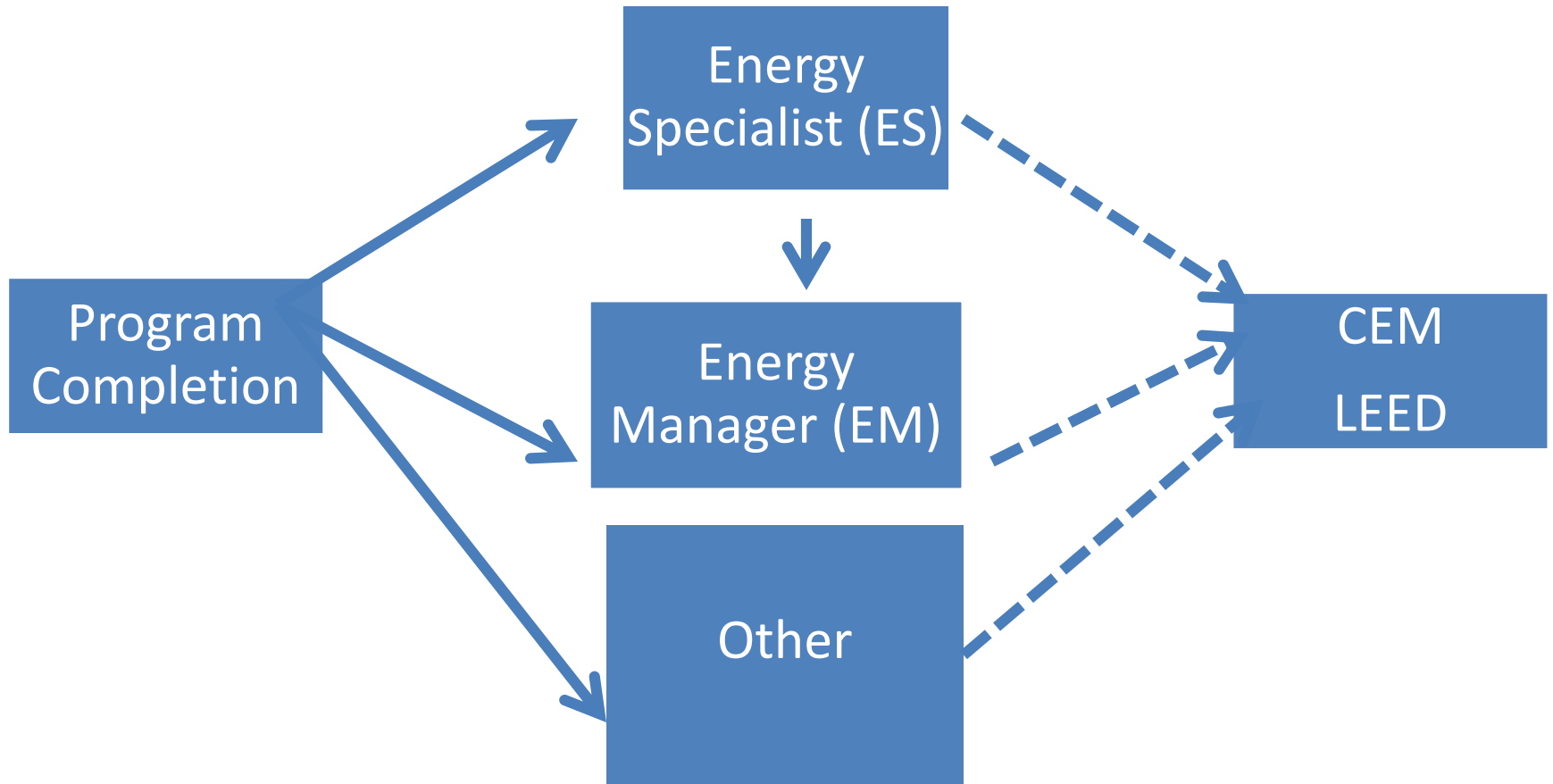
- More and more graduates have gone on to work within other organizations that are not part of the PowerSmart funding program
 - Consultants
 - Energy engineers
 - Maintenance managers
 - Project / Sales Engineers
- We have a number of graduates employed by Small Business Energy Advisors (BEA's)

Other Successes

- The SEMAC program acts as a transition point for those wanting to integrate energy management within the operations of an organization, or provide support services to the energy management industry.



Career Pathways



Careers

- There are many different types of positions beyond the energy manager and specialist positions that this program was originally designed for.
- Positions are all over BC, depending on who applies and receives funding (EM /ES)
- The more willing you are to move to a position, the quicker you will get hired

Program prerequisites

- 1) Degree or diploma with 5 years of work experience

or

- 2) Interprovincial Red Seal trade qualification with 5 years of work experience

or

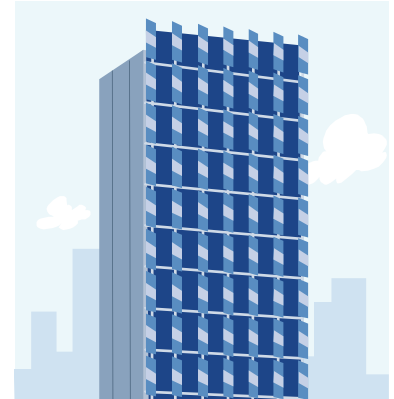
- 3) Twenty years of related work experience in the fields of facilities, energy, business, trades and/or project management

I want to take just a few courses only?

- We will be offering a limited number of seats in each course, if one does not want to take the whole program
- You will have to take, or have the equivalent knowledge and background, of the Energy Basics course (along with other entrance requirements - TBD)
- You will only be allowed to take up to an additional 2 courses without enrolling in the full program

Other Energy Curriculum

- **CESA 7100**
 - Energy Modeling for Building Prof.
- **CESA 0158/1059**
 - Introduction to Solar Electricity
 - Solar Electric Design
- **CESA 0178/0179**
 - Introduction to Solar Water Heating
 - Solar Water Heating Design
- **CESA 0198/0199** (for homeowners)
 - Residential Energy Efficiency
 - Residential Renewable Energy



Other Energy Curriculum

- Our goal is to develop a series of professional development courses to enable graduates to keep current in the field
- Building Automation and Controls and Energy Management is our next area of interest.

Questions?

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bcit.ca/semac

