CUNY The City University of New York

energy NYC

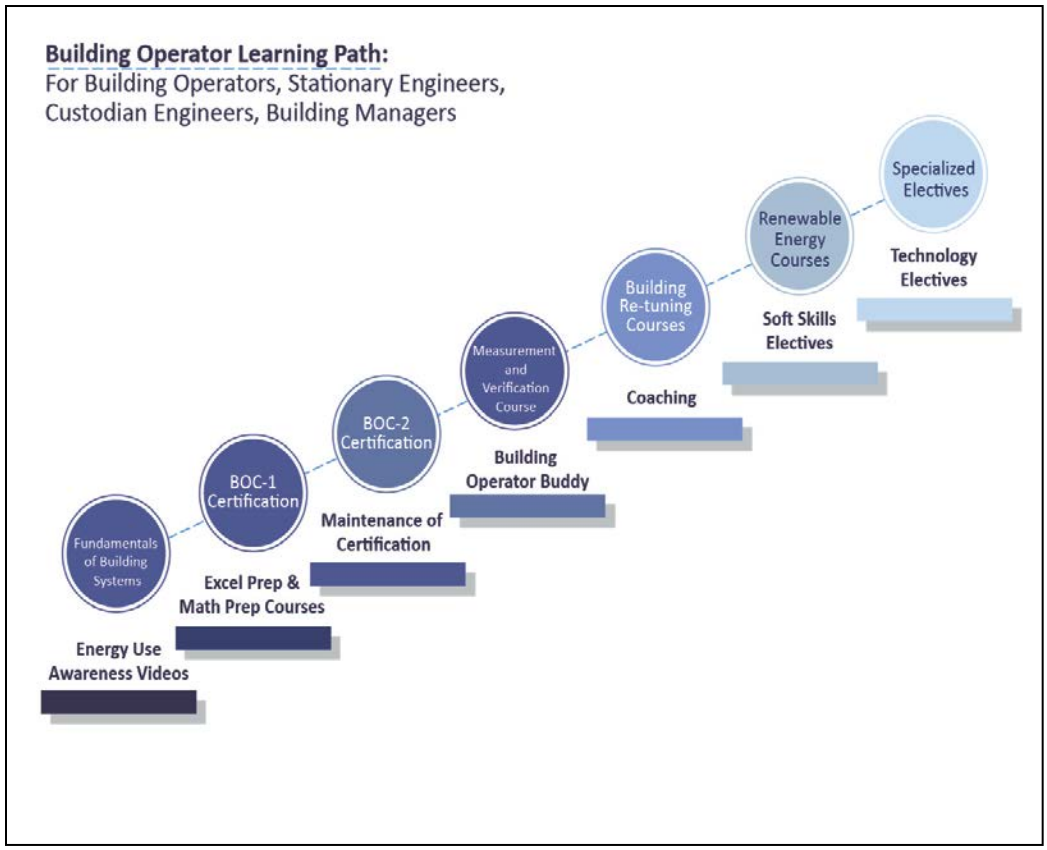
Energy Management Institute

Complete Course Catalog

DCAS Energy Management, in partnership with the City University of New York (CUNY) School of Professional Studies (SPS), CUNY Building Performance Lab (BPL) and the Citywide Training Center (CTC), is pleased to present our complete course catalog.

The goal of the Energy Management Institute (EMI) is to prepare city facilities personnel to make energy-smart decisions that will assist the City in meeting its greenhouse gas (GHG) emissions reduction goals.

The EMI is designed to help facility professionals across city agencies envision a learning path specifically targeted to them. **Where do you stand on this learning path?**



BUILDING OPERATOR CERTIFICATION

LEVEL I

Course Description

Building Operator Certification **(BOC) Level I** serves as the gateway training program of the Energy Management Institute. It is designed to help building operators manage their facilities to become more energy efficient as part of the City's efforts to meet its greenhouse gas reduction goals.

The BOC-1 course is a competency-based training program that prepares participants with the tools necessary to increase the energy efficiency of City facilities while maintaining comfort for the building occupants. The course provides an overview of building systems including lighting, mechanical, and electrical systems and guidance to improve thermal comfort, air quality, and life-safety considerations.

The BOC-1 program offers a unique learning experience. Instruction is delivered both in a traditional classroom setting, as well as through self-paced, online modules via the Hughes Learning Management System.

The program is facilitated by CUNY subject matter expert Instructors with deep experience and knowledge in engineering and the efficient operation of plants and equipment.

Sample Course Overview

Term:	Spring
Day(s):	Friday
Date(s):	Jan 12, 26 Feb 9, 23 March 9, 16 April 6, 20, 27 May 11
Sessions:	9 Classroom 2 Webinars: (1/12, 3/16)
Hours:	9:00am-4:00pm (Class) 10:00am-11:00am (Webinar)
Location(s):	Citywide Training Center 1 Centre Street 24th Floor, South Tower
Code:	TBA
Registration Deadline:	December 29

Learning Objectives

At the conclusion of this program, participants will be able to:

- Apply knowledge of building mechanical and electrical systems—HVAC equipment and controls, electrical distribution, motors, and lighting, and how their operation relates to energy efficiency performance and building comfort conditions.
- Recognize system configurations, drawings of schematics, observation and interpretation of operating conditions.
- Develop strategies for systematic maintenance and performance monitoring.

Who Should Enroll

The course is designed for building operators who may have limited formal systems training, but have substantial work experience in building systems. This course is also beneficial to facility managers who have entered the field from a management background and seek to improve their understanding of physical and equipment principles.

Course Materials

On the first day of training, each participant will receive a course binder, textbooks published by the Building Operator Certification governing body (NEEC) and a copy of *"Energy- Efficient Operation of Commercial Buildings: Redefining the Energy Manager's Job*" by Peter Herzog.

Grading & Practical Project

To earn the nationally recognized Building Operator Training Certificate of Completion, credential, participants must:

- Attend and participate in the 9 in-class sessions,
- Attend and participate in the 2 online webinars,
- Satisfactorily complete the 14 on-line lessons,
- Take and pass 4 module specific exams,
- Submit 4 practical project assignments focused on applying concepts learned in class to the facilities where they work.

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

"Advice from NYC's Operations & Maintenance Champions":
http://www.nyc.gov/html/dem/html/training/training_videos.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Prep Courses

After registering, CUNY SPS will send the employee links to two mandatory skills assessments (Math and Microsoft Excel).

- Both assessments take about 15 minutes each to complete.
- Students' scores will determine if they also need to take the online, self-paced prep courses prior to their BOC-1 class start date.

Elective Courses

- Communication Skills for Technical Professionals
- Outlook 2013 Level 1
- Writing Effective and Efficient E-mails

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $1,875** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

BUILDING OPERATOR CERTIFICATION

LEVEL II

Course Description

For those who have completed BOC-1, this advanced program provides an opportunity to deepen building performance skills, while working towards earning **the BOC-2** credential.

This competency based program helps building operators and stationary engineers improve their job skills by teaching the tools necessary to increase building efficiency, improve occupant comfort and conduct energy efficient facility operations that meet the city's greenhouse gas reduction goal.

This **14-week**, **4 module** course offers a blended learning format that includes:

- One (1) hour virtual webinars before the start of each module for participants to meet with their instructor to discuss the course content, projects, and ensure they are prepared to succeed in the program.
- Self-paced, online learning modules that support the content delivered in the classroom.
- Two (2) days of classroom instruction per module so participants can walk through the technical curriculum with CUNY subject matter experts, as well as learn from peers at other City agencies.

Sample Course Overview	
Term:	Spring
Day(s):	Friday
Date(s):	Jan 19 Feb 2, 16, 23 March 2, 16, 23 April 6, 20, 27 May 4, 18
Sessions:	8 Classroom 4 Webinars: (1/19, 2/23, 3/23, 4/27)
Hours:	9:00am-4:00pm: (Class) 10:00am-11:00am (Webinar)
Location(s):	Citywide Training Center 1 Centre Street 24th Floor, South Tower
Code:	TBA
Registration Deadline:	December 29

Learning Objectives

At the conclusion of this program, participants will be able to:

- Collect facility operating data for monitoring and troubleshooting of operations.
- Identify sophisticated controls and control strategies.
- Identify, diagnose, and correct control errors.
- Use energy data to maintain high levels of building performance.
- Select and apply maintenance strategies and techniques.

Who Should Enroll

Employees who have earned the Building Operator Certification Level I (BOC-1) Training Certificate of Completion credential at least 1 year prior to registering for BOC-2.

Course Materials

On the first day of training, each participant will receive a course binder, a complete set of BOC-2 Handbooks, and additional study materials.

Grading & Practical Project

To earn the nationally recognized Building Operator Certification Level II (BOC-2) Training Certificate of Completion credential, participants must:

- Attend and participate in the 8 in- class sessions.
- Attend and participate in the 4 online webinars.
- Satisfactorily complete the 14 on-line lessons.
- Take and pass 4 module specific exams.
- Submit 4 practical project assignments focused on applying concepts learned in class to the facilities where the participants work.

Program Prerequisites

BOC-1 Training Certificate of Completion Credential

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Elective Courses

- Fundamentals of Supervision
- Communication Skills for Technical Professionals
- Writing Effective & Efficient Emails
- Building Positive Workplace Relationships

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $1,875** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

BUILDING RE-TUNING

Course Description

Building Re-Tuning (BRT) training is designed to give building operators advanced training in analysis of facility operations to further identify efficiency improvements.

The BRT course is offered as 5 in-class sessions that include integrated project-based work that is completed by participants in between classroom meetings. The course is aimed at operators and managers with previous energy management training (BOC-1 and/or BOC-2, Certified Energy Manager, etc.).

BRT is designed to teach participants the skills that are needed to conduct a re-tuning of facilities that use a BAS/BMS system. The course walks participants through the BRT process from foundational concepts through an initial BRT tune-up. BRT training requires hands-on implementation practice in their facility.

NOTE: Participants must have access to an agency building and be able to access trend logging functions in a BAS/BMS.

Sample Course Overview

Term:	Spring
Day(s):	Thursday
Date(s):	April 12, 19, 26 May 3, 17
Sessions:	5
Hours:	9:00am-12:00pm
Location(s):	Citywide Training Center, 1 Centre Street 24th Floor, South Tower
Code:	TBA
Registration Deadline:	February 2

Learning Objectives

At the conclusion of this program, participants will be able to:

- Explain the overall BRT process from start to finish.
- Identify how BRT protocol relates to retro-commissioning and continuous commissioning concepts/practices.
- Create trend logs using BAS data collection function.
- Create graphic displays from BAS/BMS data using basic methodologies.
- Interpret graphical trend data for diagnostics and identification of energy reduction/optimization opportunities.

Who Should Enroll

This course is designed for building operators with previous energy efficiency/energy management training. It is also beneficial to facility managers who have entered the field from a management background and seek to gain skills in data-driven facility diagnostics. Participants should have a working knowledge of energy efficiency in building systems and the ability to access trend log functions in their facility's BAS/BMS.

Course Materials

Each participant will receive a course binder based on materials from the Pacific Northwest National Lab and access to on-line study materials. The field project component will be conducted over the course of the 5- week program.

CUNY engineering student interns will be available to assist with various aspects of the project, e.g. related to new graphing software applications.

Grading & Practical Project

Participants will be evaluated based on their ability to conduct an initial BRT project using BAS/BMS data in discrete steps during the 5 weeks of the course.

Program Prerequisites

BOC Level I Credential

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

"Advice from NYC's Operations & Maintenance Champions":
http://www.nyc.gov/html/dem/html/training/training_videos.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Elective Courses

- Communication Skills for
- Technical Professionals
- Outlook 2013 Level 1
- Writing Effective & Efficient E-mails

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $ 975** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

BUILDING RE-TUNING without BUILDING AUTOMATION SYSTEM

Course Description

Building Re-Tuning without Building Automation System (noBAS BRT) is a new course designed to give building operators advanced training in analysis of facility operations to further identify efficiency improvements. The **noBAS BRT** course is offered in five (**5**) **in-class sessions**. It covers **five (5) measures/systems of interest** related to fan operation and outdoor supply.

Topics include:

- HVAC Zone Temperature
- Fan Operation Times
- Outdoor Air (OA) Control
- Discharge Air Temperature Hunting & OA Damper Minimum Position

The noBAS BRT course is designed to teach participants the skills needed to conduct re-tuning of facilities that **do not** use a BAS/BMS system. Participants learn to identify inefficiencies and appropriate operation improvements. Integrated project-based assignments are completed by participants in between classroom meetings.

Note: Participants must have access to an agency building to attend this course.

Sample Course Overview

Term:	Spring
Day(s):	Wednesday
Date(s):	Feb 21 March 7, 21 April 4, 18
Sessions:	5
Hours:	9:00am-4:00pm
Location(s):	Citywide Training Center, 1 Centre Street 24th Floor, South Tower
Code:	TBA
Registration Deadline:	February 2

Learning Objectives

At the conclusion of this program, participants will be able to:

- State the Building Re-Tuning process, its objectives and its implementation.
- Identify systems for re-tuning and the associated data requirements.
- Set-up trend logs and graphical representations.
- Interpret graphical representations to diagnose common system operating faults.
- Begin the thinking and planning for a long-term building operations improvement process.

Who Should Enroll

This course is aimed at operators and managers with previous energy management training (i.e. BOC-1 and/or BOC-2, Certified Energy Manager, etc.) It is also beneficial to facility managers who have entered the field from a management background and seek to gain skills in data-driven facility diagnostics. Participants should have a working knowledge of energy efficiency in building systems and the ability to access their agencies buildings.

Course Materials

Each participant will receive a course binder based on materials from the CUNY Building Performance Lab. The field project component will be conducted over the course of the 5-week program.

CUNY engineering student interns will be available to assist with various aspects of the project.

Grading and Practical Project

Participants will be evaluated based on their ability to conduct an initial BRT project, without the aid of a BAS/BMS.

Program Prerequisites

BOC Level I Credential

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

"Advice from NYC's Operations & Maintenance Champions":
http://www.nyc.gov/html/dem/html/training/training_videos.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Elective Courses

- Communication Skills for Technical Professionals
- Outlook 2013 Level 1
- Writing Effective & Efficient E-mails

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $ 975** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

FUNDAMENTALS OF BUILDING SYSTEMS

Course Description

Fundamentals of Building Systems is a new program that provides foundational industry knowledge pertaining to building systems, vocabulary, concepts, and the goals of energy efficiency in municipal building operations within the City of New York. This course also prepares students interested in furthering their energy management training to succeed in the next program in the series: Building Operator Certification Level I (BOC-1).

Fundamentals of Building Systems is a **blended learning course.** It consists of a half-day classroom **Introduction** session, ten (10) self-paced **online learning modules**, and a half-day classroom **Wrap-Up** session.

Topics include:

- Building Envelope
- Science of Building Systems
- HVAC, Plumbing and Electrical Building Systems
- Building Controls
- Codes, Zones and Regulatory Requirements
- Management and Maintenance
- Occupant Controls
- Risks
- Environmental Factors

Sample Course Overview

Term:	Spring
Days:	Friday
Dates:	Jan 5, 19
Sessions:	2
Hours:	9:00am – 1:00pm
Locations:	CUNY SPS 119 West 31st Street Room TBD
Code:	TBA
Registration Deadline:	December 29

Learning Objectives

At the conclusion of this program, participants will be able to:

- Identify the regulatory mandates driving municipal energy efficiency initiatives.
- Comprehend building operations systems including their relationship to overall energy consumption.
- Introduce essential scientific knowledge on electrical and mechanical engineering that pertain to building operations.
- Identify best practices for energy efficiency in municipal buildings.
- Define common terms and concepts used in building operations management.
- Demonstrate comprehension of the knowledge base needed to enter the BOC-1 program.

Who Should Enroll

This course is designed for non-building operators (i.e., Energy Managers, Energy Analysts and other administrative personnel) without previous energy efficiency/energy management training. Participants in this course **should not have the primary job responsibility for managing the building operations in their facility.**

Fundamentals of Building Systems is also the prerequisite for non-building operators who seek to complete the BOC-1 program.

Course Materials

Each participant will receive access to the Hughes Learning Management System to access the ten (10) on-line modules for this course.

Grading

Pre and post learning assessments will be administered to assess how much participants have learned by attending the classroom sessions and completing the on-line modules.

Program Prerequisites

None

Video Prerequisites

Available via the DCAS DEM website:
"**This is DEM"**
http://www.nyc.gov/html/dem/html/home/home.shtml

"Advice from NYC's Operations & Maintenance Champions"
http://www.nyc.gov/html/dem/html/training/training.shtml

"Heroes in the Basement"
http://www.nyc.gov/html/dem/html/training/training_videos.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Elective Courses

- Outlook 2013 Level 1
- Writing Effective & Efficient E-mails

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a "**No Show" fee of $ 975** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

MEASUREMENT AND VERIFICATION

Course Description

DCAS Energy Management (DEM), in partnership with the City University of New York (CUNY) School of Professional Studies (SPS) and the CUNY Building Performance Lab (BPL), has developed a new program for City employees to be trained in the process of measurement and verification (M&V) for energy efficiency projects.

DEM has several programs in place that fund capital and expense energy efficiency projects, and in order to ensure that these projects are delivering energy and greenhouse gas emissions savings, verifying the savings through a measurement and verification

The Measurement and Verification process is a critical part of the project. This new M&V course will introduce participants to the basics of M&V.

Sample Course Overview

Term:	Spring
Days:	Wednesday
Dates:	Mar 7, 28 (Classroom) Mar 14 (Webinar)
Sessions:	2 Classes 1 Webinar
Hours:	9:00am-3:00pm (Class) 10:00am-11:00am (Webinar)
Locations:	CUNY SPS 119 West 31st Street Room TBD
Code:	TBA
Registration Deadline:	February 2

Learning Objectives

At the conclusion of this course, participants will be able to:

- Identify basic terminology and concepts of measurement and verification and energy efficiency.
- Identify the most common types of variables measured in M&V projects.
- Identify the key tools used to measure and verify ECM performance.
- Identify the elements of an M&V plan and the M&V planning process as applicable to DCAS Energy Management programs.
- Prepare and present an M&V project.

Who Should Enroll

This course is designed for City personnel responsible for some level of energy conservation and implementing energy efficiency projects including: Energy Managers, Energy Analysts, Energy Liaisons, Senior Stationary Engineers, Design Engineers, Custodial Engineers and others who propose ECMs, manage the installation of ECMS, and/or are responsible for verifying the impact of ECMs once implemented.

Course Materials

Learning materials will be provided to participants on the first day of training.

Grading & Practical Project

Participants will be evaluated based on their ability to prepare and present an M & V plan according to the course guidelines.

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Prep Courses

After registering, CUNY SPS will send the employee links to two mandatory skills assessments (Math and Microsoft Excel).

- Both assessments take about 15 minutes each to complete.
- Students' scores will determine if they also need to take the online, self-paced prep courses prior to their M&V class start date.

Elective Courses

- Communication Skills for Technical Professionals
- Outlook 2013 Level 1
- Writing Effective and Efficient E- mails

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $1,875** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

RENEWABLE ENERGY 101: FUNDAMENTALS IN SOLAR PV

Course Description

DEM has partnered with the NY Sun PV Trainers Network (PVTN) and New York City College of Technology Division of Continuing Education to develop Renewable Energy 101: Fundamentals in Solar PV for City of New York employees involved with renewable energy project site selection, implementation, system operation and maintenance.

This program targets a broad audience that includes:

- Facilities Managers, Construction Project Managers, Energy Managers, and other key decision makers
- Trades staff and Building Operators (Electricians, Plumbers, Oilers, Custodial Engineers, Maintenance Workers)
- Other interested stakeholders, such as Capital Planning staff, Sustainability staff and IT Personnel

Renewable Energy 101: Fundamentals in Solar PV incorporates a blended teaching approach that includes both in-person classes and an interactive hands-on lab.

Course Overview

Term:	Spring
Day(s):	Tuesday-Friday
Date(s):	Mar 20, 21, 22 (Classroom) Mar 23 (Lab)
Session(s):	3 Classes 1 Hands-On Lab
Hours:	9:00am-3:00pm (Class) 8:30am-4:30am (Lab)
Location(s):	**Class:** CUNY SPS 119 West 31st Street Room TBD **Lab**: City Tech 25 Chapel St. Howard 4th Floor Room 418
Code:	TBA
Registration Deadline:	February 2

Learning Objectives

At the conclusion of this program, participants will be able to:

- Identify the benefits and most appropriate applications for renewable energy technologies.
- Demonstrate in-depth knowledge of solar photovoltaics, including: site selection, installation basics, operations and maintenance, and other relevant content to facilitate the execution and ensure the longevity of renewable energy projects.

Who Should Enroll

City of New York Facilities Managers, Directors, Construction Project Managers, Energy Managers, Engineers, Trades staff, Building Operators and other stakeholders responsible directly or indirectly with renewable energy project implementation, operations and maintenance.

Course Materials

Selected materials will be provided to the participants during each training day.

What is the SUN PV Trainer's Network?

NYSERDA's NY-Sun PV Trainers Network (PVTN) is a consortium of nine organizations led by Meister Consultants Group, Sustainable CUNY, and Entech Engineering that provides training and education on solar photovoltaics (PV) to municipal officials across New York State.

The network's trainings include: *Safety and Fire Considerations for Solar PV, Solar PV Permitting and Inspection Methods, Solar PV for Engineers and Architects, Introduction to Solar, Creating and Implementing Your Solarize Campaign, Expanding Commercial Solar with a Pace Program, Introduction to Community Distributed Generation: Shared Solar, Land Use Planning for Solar Energy, and Zoning for Solar Energy*. PVTN has also developed a set of dedicated resources including guidance documents, factsheets, webinars and podcasts on various solar related topics. Since September of 2014, PVTN has conducted over 180 trainings and trained close to 6,000 municipal officials across New York.

The PVTN looks forward to bringing its expertise and experience to providing a tailored course for City employees on solar PV.

New York City College of Technology Division of Continuing Education

The Division of Continuing Education and External Partnerships is committed to creating pathways to higher education, job training, and professional development programs as well as personal enrichment opportunities for our community. By serving a diverse population of learners, we help to meet the economic and workforce development needs of the evolving New York City workplace, as we promote and encourage lifelong learning.

Video Prerequisites

Available via the DCAS DEM website:

"This is DEM"
http://www.nyc.gov/html/dem/html/home/home.shtml

Available via YouTube:
https://www.youtube.com/user/dcasnyc

Available via the NY-Sun PVTN website:
NY-Sun PVTN Training Resources

IMPORTANT
CANCELLATION POLICY

If a City employee registers for a course, but drops out before satisfactory completion, a **"No Show" fee of $1,875** will be assessed to their agency's training department in accordance with CTC's cancellation policy.

CERTIFIED BUILDING COMMISSIONING PROFESSIONAL (CBCP)

Course Description

The Certified Building Commissioning Professional credential (CBCP), sponsored by the Association of Energy Engineers, acknowledges an individual's deep understanding of the commissioning process, and recognizes them as a Subject Matter Expert in applying commissioning techniques. Holding the CBCP credential prepares the building operator or facility professional to meet the requirements of Local Law 87 which requires all buildings in New York City over 50,000 square feet to perform retro-commissioning of systems and to submit an energy efficiency report based on a building audit. This five-day course is designed to prepare participants to sit for the CBCP certification exam, and will include several workshops where participants are challenged to produce real retro-commissioning (RCx) deliverables, and come up with practical solutions to typical RCx problems. The CBCP exam will be administered on the last day of the course (separate application required).

Objectives

The goals of the CBCP program are to distinguishing facility professionals who possess the full scope of knowledge requisite for the effective commissioning of existing buildings, and who demonstrate high levels of experience, competence, and specialized knowledge within the field.

Sample Course Overview

Days:	Daily
Dates:	Mar 13, Mar 14 Mar 15, Mar 16
Sessions:	4
Hours:	8:30AM-4:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7101
Registration Deadline:	February 13

Certification Process

To obtain the CBCP credential, each applicant is required to (a) attend the four-day exam prep course, (b) submit an AEE exam application form before sitting for the exam (available from proctor, immediately before the exam), and (c) pass the certifying exam. Note: The CBCP application fee will be covered by DCAS Energy Management for the initial exam; exam re-takes are $100.

Who Should Enroll

This five-day course is not intended as an immersive opportunity for building operators and others to learn about the Commissioning process; rather, it will review the technical details of the commissioning process for participants interested in earning the CBCP credential. Building Operators, Senior Stationary Engineers, Stationary Engineers, Custodian Engineers, Building Managers, Architects, Engineers, Engineering Project Managers, Construction Project Managers, and Supervisors of trades teams such as Electricians and Maintenance Mechanics who have earned their BOC Level I credential are encouraged to enroll.

Textbooks

AEE course materials will be provided to registrants two weeks in advance of the course start date.

Prerequisites

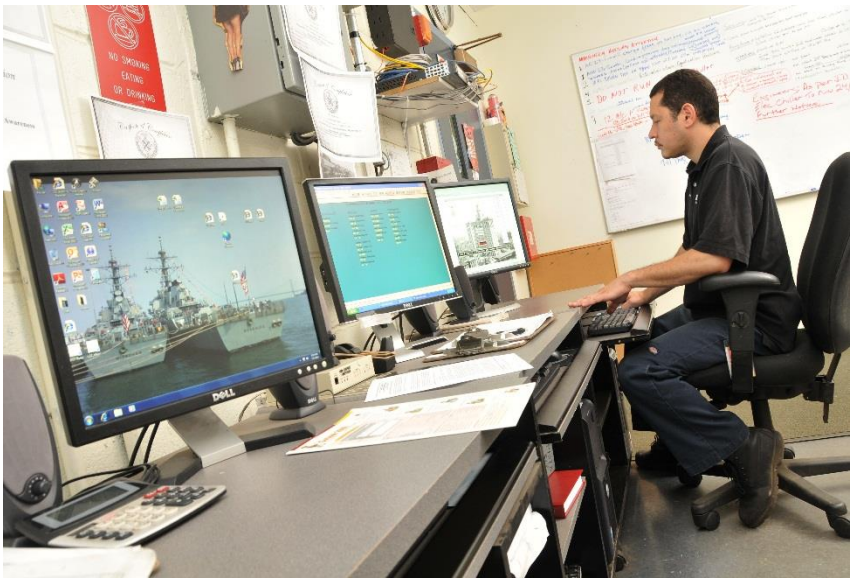
- **BOC Level I Credential**

Elective Courses:

- **Fundamentals of Supervision**
- **Communications Skills for Technical Professionals**
- **Writing Effective and Efficient E-Mails**
- **Building Positive Workplace Relationships**

IMPORTANT

DCAS Energy Management covers the cost of city staff participation in this CBCP exam prep course in order to improve the energy efficiency of building operations & maintenance, and to encourage building staff to develop, implement and monitor energy efficiency projects. If a city employee registers for this course but drops out before satisfactory completion, a fee of $1,450 will be assessed to their agency's training department for "no show" cancellation policy.



CERTIFIED ENERGY MANAGER (CEM)

Course Description

The Certified Energy Manager (CEM) credential has become widely used as a measure of professional accomplishment within the energy management field. It has gained recognition as the standard for qualifying energy professionals both in the United States and abroad. It is recognized by the U.S. Department of Energy, the Office of Federal Energy Management Programs (FEMP), and by numerous state energy offices, major utilities, corporations and energy service companies. This course is a comprehensive four-day exam preparation course designed to prepare facility professionals to earn their CEM certification. The CEM exam will be administered at the conclusion of the four-day review (separate application required). The certification is sponsored by the Association of Energy Engineers (AEE), and is hosted by the City University of New York's School of Professional Studies (CUNY SPS).

Objectives

The objectives of the CEM program are to raise the professional standards of those engaged in energy management, to improve the practice of energy management by encouraging energy managers in a continuing program of professional development and to award special recognition to those energy managers who have demonstrated a high level of competence and ethical fitness for energy management.

Sample Course Overview

Days:	Daily
Dates:	Jun 12, Jun 13, Jun 14, June 15 June 16
Sessions:	5
Hours:	8:30AM-4:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7100
Registration Deadline:	May 7

Eligibility

The CEM candidate must meet one of the following eligibility criteria sets:

EDUCATION		EXPERIENCE
4-yr degree in Engineering or Architecture, OR be a PE or RA	And	3+ yrs in energy engineering or energy management
4-yr degree in environmental science, physics or earth science	And	4+ yrs of experience in energy engineering or energy management
4-yr degree in business (or related field)	And	5+ yrs experience in energy engineering or energy management
2-yr Associate's degree in Energy Management	And	6+ yrs experience in energy engineering or energy management
2-yr Associates degree in a technical topic	And	8+ yrs experience in energy engineering or energy management
NONE	And	10+ yrs experience in energy engineering or energy management

Who Should Enroll

Building Operators, Senior Stationary Engineers, Stationary Engineers, Deputy Directors of Facilities, Custodian Engineers, Building Managers, Architects, Engineers, Engineering Project Managers, Construction Project Managers, and Supervisors of trades are encouraged to enroll if they meet the eligibility requirements noted in the chart above.

Textbooks

AEE course materials will be provided to registrants two weeks in advance of the course start date.

Prerequisites

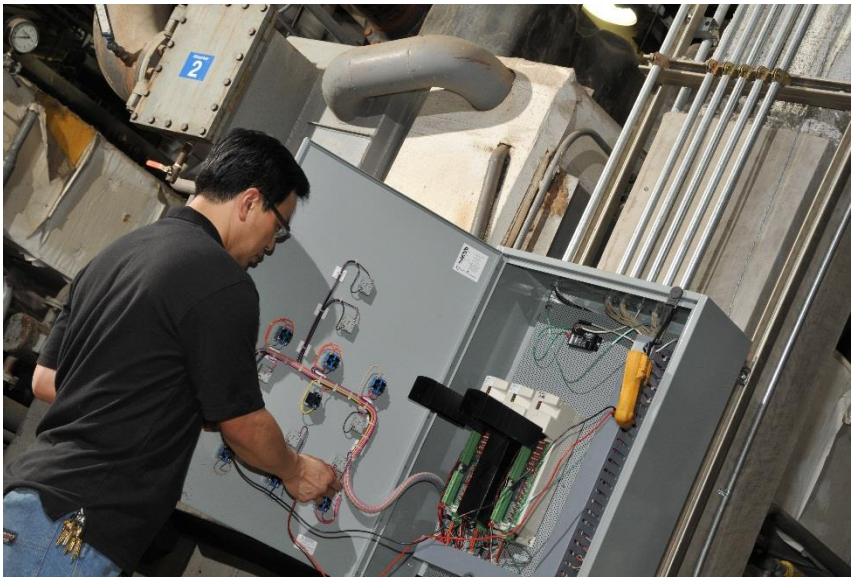
- **BOC Level I Credential**
- **BOC Level II Credential**

Certification Process

- Meet the stated eligibility criteria
- Attend the 5-day exam prep course
- Submit an AEE exam application form before sitting for the exam (provided during the exam prep)
- Pass the 4-hr, written, open-book CEM exam

IMPORTANT

If a city employee registers for the course but drops out before satisfactory completion, a fee of $1,875 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.



ENERGY EFFICIENT OPERATIONS of ELECTRICAL SYSTEMS

Course Description

In recognition of the critical role they play in the repair and maintenance of city operated facilities, particularly in relation to lighting systems, DCAS has invested resources in developing an energy management program geared to the 400+ Electricians and Electrical Supervisors working in city agencies. The program will include training on topics related to Lighting and Lighting Controls, Motors and Motor Controls, Planned Maintenance, Meters and Sub-meters, Commissioning, Safety, and others. While the program will include some basic training on concepts and the primary systems Electricians come into contact with on a daily basis, it is not intended to serve as an apprenticeship training program. This energy management program will rely on the Electricians' working knowledge of lighting, heating and electrical systems, and train the employees on optimal operations and maintenance techniques.

Online Classes

The program has been designed to maximize employee skill building while being sensitive to the need for Electricians to be in the field. Five (5) in-classroom training sessions will be complimented with self-paced, online lessons taken on days that work best for the trainee. The trainees will be provided with access to the online learning system, and trainers and help desk personnel at CUNY will be available to support the employees while in training if they experience any log-on issues.

Sample Course Overview

Days:	Wednesdays
Dates:	Feb 8, Feb 22 Mar 8, Mar 22 Apr 5
Sessions:	5
Hours:	8:30AM-3:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7105
Registration Deadline:	January 6

Objectives

- Train the Electrician and Electrical Supervisor on the City's greenhouse gas reduction goals, and their role in achieving them.
- Emphasize the importance of identifying waste as an important step toward energy consumption reduction, with a concentration on the key areas where waste can be identified and reduced.
- Explain what Planned Maintenance is, the various types of planned maintenance, and how to create and use planned maintenance schedules.
- To understand what Power Quality is, why it matters, where efficiency problems come from, and how to investigate and mitigate power quality issues.
- How Solar Photovoltaic (PV) systems work, monitoring their effectiveness, and troubleshooting maintenance problems.
- Safety protocols to follow, and personal protective equipment to wear, during the course of their day.

Who Should Enroll

Any Electrician or Electrical Supervisor working in city agencies.

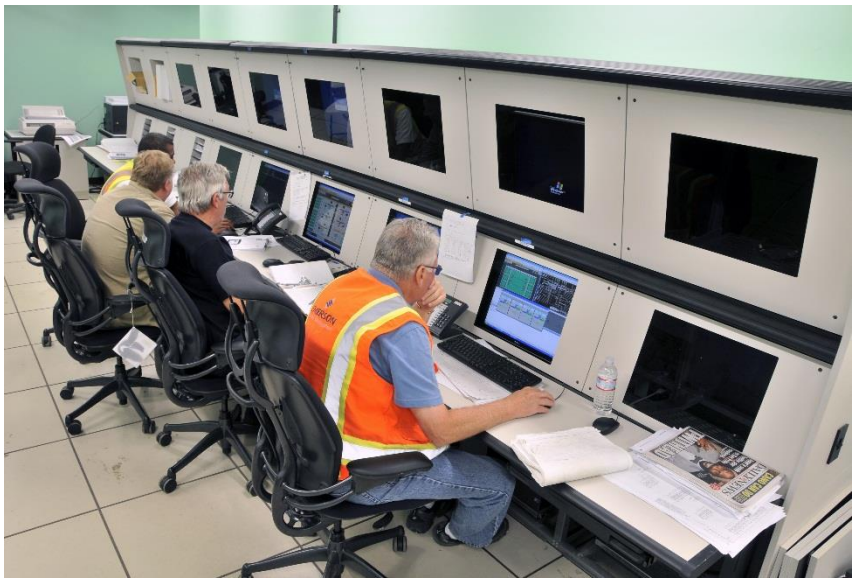
Textbooks

Learning materials will be provided to the participants on the first day of training.

Prerequisites

- **Saving Energy In NYC; It's All About Us!**
- **Advice from NYC's Operations & Maintenance Champions**

IMPORTANT
If a city employee registers for the course but drops out before satisfactory completion, a fee of $750 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.



ENERGY EFFICIENT OPERATIONS of CONTROLS SYSTEMS

Course Description

Facility personnel trained in control systems play a critical role in managing energy at agencies across the city. Proper operation and maintenance of the pneumatic and DDC systems in city owned and managed buildings dictate whether or not our greenhouse gas emission reduction goals are met.

To ensure City controls operators' know the full range of energy savings strategies available, DCAS Energy Management engaged CUNY to deliver a customized training program that involves in-classroom instruction, as well as self-paced online courses.

Blended Learning Format

This program has been designed to maximize employee skill building while being sensitive to the need for the controls operators' to be in the field responding to work orders.

Five (5) in-classroom training sessions will be complimented with self-paced, online lessons. The participants will be given access to the online learning system, and instructors and help desk personnel at CUNY SPS. They will be available to support employees during training if they experience any log-on issues.

Sample Course Overview

Days:	Tuesdays
Dates:	Apr 4, Apr 18 May 2, May 16 Jun 6
Sessions:	5
Hours:	8:30AM-3:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7106
Registration Deadline:	March 4

Objectives

Upon completion of this course participants will be able to:

- Identify the differences between single input versus multiple input pneumatic receiver controllers
- Explain variable speed drive, control valve and control damper applications
- Complete assigned daily work orders in the most energy efficient manner possible
- Perform planned maintenance that will extend equipment life and reduce repairs
- Protect your personal safety and the safety of those around you
- Communicate more effectively with building occupants, colleagues and supervisors

Who Should Enroll

Any Thermostat Repairer, TR Supervisors or other facility personnel working on controls systems in City agencies.

Course Materials

Each participant will receive a course handbook on the first day of training.

Video Prerequisites
Available via the DCAS DEM website:
http://www.nyc.gov/html/dem/html/home /home.shtml

- **Saving Energy In NYC; It's All About Us!**
- **Advice from NYC's Operations & Maintenance Champions**

IMPORTANT
If a city employee registers for the course but drops out before satisfactory completion, a fee of $750 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.

ENERGY EFFICIENT OPERATIONS of MECHANICAL SYSTEMS

Course Description

DCAS Energy Management and CUNY are now offering a training program that focuses on belts, shafts, couplings, bearings, hoses, valves, coils, filters, strainers that mechanical personnel encounter. This training will cover installation, maintenance and troubleshooting. Time will also be spent discussing controls and building management system sensors. The training will include both classroom sessions, and self-paced online lessons, and be delivered by CUNY Subject Matter Expert Trainers.

Online Classes

The program has been designed to maximize employee skill building while being sensitive to the need for frontline employees to be in the field responding to work orders. Four (4) in-classroom training sessions will be complimented with self-paced, online lessons taken on days that work best for the trainee. The trainees will be provided with access to the online learning system, and trainers and help desk personnel at CUNY will be available to support the employees while in training if they experience any log-on issues.

Sample Course Overview

Days:	Tuesdays
Dates:	Mar 7, Mar 21 Apr 4, Apr 18 May 2
Sessions:	5
Hours:	8:30AM-3:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7108
Registration Deadline:	February 6

Objectives

Upon completion of this training program you will be able to:

- Name the different types of belts, and explain uses for each.
- Explain the factors that impact bearing performance.
- Complete your assigned daily work orders in the most energy efficient manner possible.
- Perform planned maintenance that will extend equipment life and reduce repairs.
- Protect your personal safety and the safety of those around you.
- Communicate more effectively with building occupants, colleagues and supervisors.

Who Should Enroll

Supervisors of Mechanics, Mechanics, Oilers, Stationary Engineers, Building Operators, High Pressure Plant Tenders or other facility personnel.

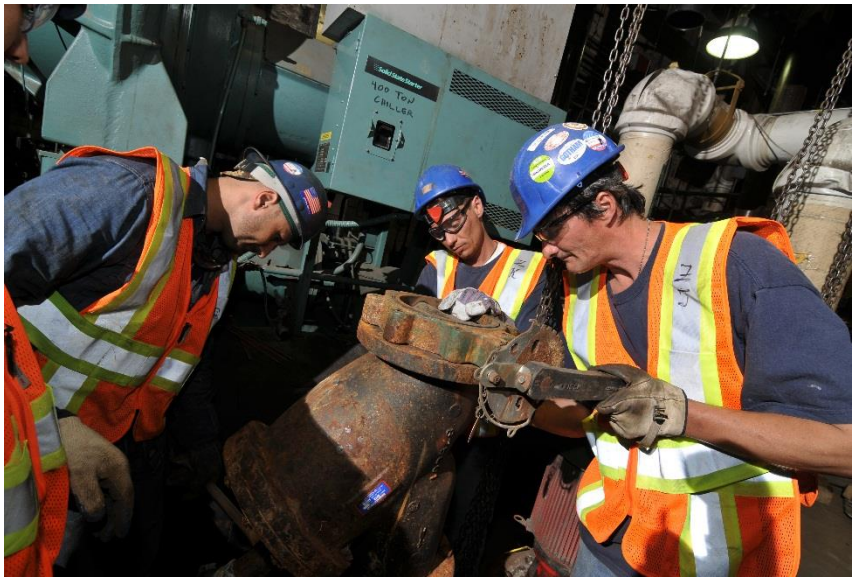
Textbooks

Learning materials will be provided to the participants on the first day of training.

Prerequisites

- **Saving Energy In NYC; It's All About Us!**
- **Advice from NYC's Operations & Maintenance Champions**

IMPORTANT
If a city employee registers for the course but drops out before satisfactory completion, a fee of $545 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.



ENERGY EFFICIENT OPERATIONS of PLUMBING SYSTEMS

Course Description

The work Plumbers and Plumbing Supervisors perform in city buildings each day is essential to conserving water, one of the city's most valuable resources. By using less water, we also reduce the amount of sewage that is processed and reintroduced into our natural systems. As city plumbing personnel know from first-hand experience, some of the water systems in New York City can be as much as 100 years old. These systems suffer from constant leaks and damage, which exposes water to pollutants and limits the amount of water that can be supplied directly to office buildings, schools and hospitals. With this program, properly trained personnel will be more equipped to identify and troubleshoot supply systems and infrastructure problems. Most importantly, they will have the knowledge to advise building operators and capital planners on where to prioritize system enhancements, and select new technologies where appropriate.

Online Classes

The program has been designed to maximize employee skill building while being sensitive to the need for employees to be in the field. Three (3) in-class training sessions will be complimented with self- paced, online lessons taken on days that work best for the trainee. The trainees will be provided with access to the online learning system, and trainers and help desk personnel at CUNY will be available to support the employees while in training if they experience any log-on issues.

Sample Course Overview

Days:	Thursdays
Dates:	Jun 1 Jun 15 Jun 29
Sessions:	3
Hours:	8:30AM-3:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7109
Registration Deadline:	May 1

Topics Covered

- The City's Sustainability Plan to reduce Greenhouse Gas Emissions.
- How to complete assigned work orders with a more energy conscious mindset.
- Water Conservation opportunities ranging from leaks and fixtures, to repairs.
- Potable Hot Water, in hot water heaters and boilers.
- Compressed Air Systems, Natural Gas and Vacuum Systems.
- Pumps, Circulators and Insulation.
- Green Technologies, and New Piping Technologies.
- How to communicate more effectively with building occupants, colleagues and supervisors.

Who Should Enroll

Any Plumber, Plumbing Supervisor or other facility personnel working in City agencies.

Textbooks

Learning materials will be provided to the participants on the first day of training.

Prerequisites

- **Saving Energy In NYC; It's All About Us!**
- **Advice from NYC's Operations & Maintenance Champions**

IMPORTANT
If a city employee registers for the course but drops out before satisfactory completion, a fee of $725 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.

ENERGY EFFICIENT OPERATIONS of PIPING SYSTEMS

Course Description

Pipefitters and Steamfitters are important partners in achieving the energy consumption reduction and Greenhouse Gas (GHG) emission reduction goals. DCAS Energy Management Division and CUNY are now offering a training program that focuses on the heating, cooling, steam and hot water, and controls systems Pipefitters and Steamfitters come into contact with each day, and emphasizes the energy efficiency practices for critical equipment in these systems. The training will include both classroom sessions, and self-paced online lessons, and be delivered by CUNY Subject Matter Expert Trainers.

Online Classes

The program has been designed to maximize employee skill building while being sensitive to the need for Pipe & Steamfitters to be in the field responding to work orders. Three (3) in-classroom training sessions will be complimented with self-paced, online lessons which can be taken on days that work best for the trainee. The trainees will be provided with access to the online learning system, a username and password on their first day in class. Trainers and help desk personnel at CUNY will be available to support the employees while in training if they experience any log-on issues.

Sample Course Overview

Days:	Thursdays
Dates:	May 25 Jun 8 Jun 22
Sessions:	3
Hours:	8:30AM-3:30PM
Locations:	CUNY SPS 119 W. 31st St. Room TBA
Code:	C7107
Registration Deadline:	April 25

Objectives

Upon completion of this training program you will be able to:

- Describe the important role you play in energy efficiency and energy savings.
- Complete your assigned daily work orders in the most energy efficient manner possible.
- Perform planned maintenance that will extend equipment life and reduce repairs.
- Protect your personal safety and the safety of those around you.
- Communicate more effectively with building occupants, colleagues and supervisors.

Who Should Enroll

Any Pipe or Steamfitter, or Pipe & Steamfitter Supervisor working in city agencies.

Textbooks

Selected materials will be provided to the participants during each training day.

Prerequisites

- **Saving Energy In NYC; It's All About Us!**
- **Advice from NYC's Operations & Maintenance Champions**

IMPORTANT
If a city employee registers for the course but drops out before satisfactory completion, a fee of $750 will be assessed to their agency training department for "no show" in accordance with CTC cancellation policy.

Department of Citywide Services Energy Management

The City University of New York