Content Community Connection

United States
The Electricity Forum Inc.
742 Pre Emption Road
Geneva, NY 14456
Tel 289-387-1025

Canada
The Electricity Forum
1885 Clements Rd, Unit 218
Pickering, ON L1W3V4
Tel 905-686-1040
Fax 905-686-1078
Toll Free 855-824-6131

Building Automation Training

View Course Details

COURSE DATES AND TIMES

Building Automation Training Overview

Our 12-hour instructor-led training course focuses on real-world BAS architecture, open communication protocols such as BACnet, commissioning workflows, and energy optimization strategies. It is professional training, not a product demonstration or general code overview, and is intended for participants who must make accountable decisions about system interoperability, performance, and long-term cost control.

This building automation training course explains how intelligent BAS platforms are structured, integrated, commissioned, and maintained to meet modern performance expectations. Participants learn how centralized control strategies, open communication protocols, and data-driven automation support energy management, demand response, renewable integration, and long-term operational stability across commercial, institutional, industrial, and multi-residential facilities.

The emphasis is on how building automation systems behave in real operating environments, not how they are described in specifications or theory. The course helps professionals understand why decisions made during design, integration, and commissioning continue to affect performance, safety, and cost throughout the system lifecycle.

Certification and Professional Outcomes

This course supports professional development for engineers, technicians, facility managers, and energy professionals responsible for intelligent building systems.

By the end of the course, participants will be able to:

- Evaluate building automation system architecture used in modern facilities

- Interpret and apply BAS communication protocols such as BACnet and Modbus
- Participate in BAS design, integration, commissioning, upgrade, and retrofit projects
- Identify opportunities for energy optimization, demand control, and operational cost reduction
- Communicate effectively with designers, system integrators, and automation vendors
- Support data collection strategies for analytics, fault detection, and AI-enabled applications

Course Focus Areas

This course focuses on:

- Building automation system architecture and system hierarchy
- BAS integration across HVAC, lighting, security, and life-safety systems
- Communication protocols and system interoperability
- Economics and lifecycle considerations of BAS investments
- Emerging technologies, including IoT, analytics, fault detection and diagnostics, AI, and digital twin concepts
- Hardware and software innovations in modern BAS platforms

What You Will Learn

This interactive course uses practical examples to provide participants with a working understanding of intelligent building automation systems as they are applied in real facilities.

Participants will learn to:

- Identify and describe major BAS components for HVAC, lighting, security, fire, and safety systems

- Understand mechanical and electrical components used in automated HVAC control systems
- Explain core BAS functions and control strategies
- Reference applicable codes, standards, and guidelines affecting BAS design and operation
- Understand human-machine interface concepts and remote system access
- Describe BAS networking fundamentals and communication methods
- Explain BAS implementation and commissioning processes
- Apply energy conservation and demand control strategies
- Understand data collection requirements for analytics and AI applications
- Recognize how BAS aligns with building performance frameworks and rating systems

Instructor and Course Delivery

This building automation training is delivered live by an experienced instructor with an extensive background in building automation systems, system integration, and operational deployment across commercial and industrial facilities. The course is instructor-led, interactive, and focused on practical application rather than vendor-specific products.

Participants benefit from real-world examples, applied system concepts, and direct instructor interaction throughout both days.

WHO SHOULD ATTEND

This course is designed for professionals involved in the design, operation, maintenance, or management of building automation systems, including:

- BAS technicians and controls programmers
- Facility and operations managers

- Mechanical and electrical system designers
- Energy management professionals
- Building automation system integrators
- Consulting engineers
- Maintenance managers and supervisors
- Building engineers and operators
- Plant and facility maintenance technicians
- Building owners and asset managers

This course is suitable for participants seeking a structured, practical introduction to intelligent building automation systems and their real-world applications.

STUDENTS RECEIVE

- 100-Page Electrical Maintenance Handbook - Value $20 (details below)
- 1.2 Continuing Education Unit (CEU) Credits (12 Professional Development Hours)
- A **FREE** Magazine Subscription (Value $50)
- **$100** Coupon toward any future Electricity Forum event (restrictions apply)
- Course Materials in PDF Format

COURSE OUTLINE

Building Automation Training Course Outline

DAY ONE

BUILDING AUTOMATION OVERVIEW

• History of Building Automation

• Building Types and key Requirements

• Current and Future Trends – Wired & Wireless – FDD -AI – IoT- Digital Twin

• Delivery of BAS – Designers, System Integrators and Contractors

TYPES OF BUILDING AUTOMATION AND CONTROL SYSTEMS

• Building Automation Systems (BAS)

• Building control System (BcS)

• Building management System (BmS)

• Direct Digital Control (DDC)

• Energy management and control Systems (EmcS)

BAS APPLICATIONS

• Building HVAC Basicscityforum.com/electrical-training/building-automation-training

• Air Handler controls

• Security and Door Access Systems

• BAS Surveillance systems

• BAS Fire and Safety Systems

BAS SYSTEM SOLUTIONS

• DDC controllers and sensors

• Space condition controls

• Boiler and Chiller Plants

• Air Handler controls

• Lighting controls

• Human machine Interface (HMI)

BAS COMMUNICATION PROTOCOLS

• BACnet, BACnet/IP, BACnet MS/TP

• EnOcean

• LONWORKS

• Modbus

• OPC

• Zigbee

• LoRA

• Bluetooth

• Zwave

BUILDING RAINING

COMPLIMENTARY BUILDING INITIATIVES

• BOMA BEST

• Energy Star

• LEED Accreditation

• Green Globes

• WELL, Fitwel

• Net Zero Carbon

• Associations – CABA, ISA, BOMA, IFMA, CaGBC

BENEFITS OF BUILDING AUTOMATION SYSTEMS

• Energy Savings

• Environmental Impact Reduction

• Improved Security

• DVR and CCTV Systems interaction

• Interaction with Life Safety Systems and Fire Protection

• Building maintenance using BAS / BmS with CMMS

• Operator convenience

• Power monitoring

• Security

• Closed circuit video (CCTV)

• Card and keypad access

• Elevator/escalator control

• Plumbing and water/wastewater management

DAY TWO

BAS SYSTEM DELIVERY PROCESS -New and Upgrade

• Design and Specification

• Project Engineering

• Application Development of custom functions

• Implementation of a specific applications

• Maintaining a BAS System

DAY TWO

BAS INTEGRATION

• Space condition controls

• Air Handler controls

• Air Handling Units (AHUs)

• Roof-top Units (RTUs)

• Fan coil Units (FCUs)

• Heat Pump Units (HPUs)

• Variable Air Volume boxes (VAVs)

BAS STRATEGIES FOR ENERGY REDUCTION

• Chillers control

• Boilers control and Backup

• Lighting control

• Typical Process close Loop control

• Demand Control Ventilation

• Central Utilities

• Energy conservation

• Water conservation

• Water leak Detection

BAS SYSTEM SOLUTIONS

• DDC Basics-Direct Digital control

• Local control and Field devices

• Human machine Interface (HMI) Applications

• IoT and Digital Twin -FDD -AI - ML

BAS SYSTEM INFORMATION INTERACTIONS

• Occupancy and Security System to BAS

• DVR and CCTV Systems interaction

• First Responders Digital Information

• Interaction with Life Safety Systems and Fire Protection

BAS ECONOMICS:

• Design and Life cycle costing reports for Intelligent Buildings

• Monetization of Intelligent Building

• Utility and government incentive programs

BUILDING MAINTENANCE USING BAS/BmS

• CMMS interface with BAS

• Project Haystack naming convention

• Real time monitoring benefits

BAS CASE STUDIES:

• High Performance Buildings

• Smart Buildings

Questions and Answers

COURSE TIMETABLE

Both days:

Start: 10:00 a.m. Eastern Time
Finish: 4:30 p.m. Eastern Time

Contact us Today for a FREE quotation to deliver this course at your company's location.

Request Quote