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Building Automation Training

View Course Details

COURSE DATES AND TIMES

Building Automation Training Overview

Much of today's building infrastructure, including hospitals, data centers, industrial facilities, and commercial and multi-residential buildings, relies on legacy automation systems that fail to deliver the full benefits of integration, data visibility, and real-time control. These systems often operate in isolation, limiting energy savings, operational insight, and system reliability.

This Building Automation Training course teaches how intelligent building automation systems are designed, integrated, commissioned, and maintained to meet modern performance expectations. Participants learn how BAS platforms coordinate HVAC, lighting, security, fire, and life-safety systems using industry standards, open communication protocols, and centralized control strategies.

The course emphasizes how intelligent building automation supports energy management, demand response, renewable energy integration, security, safety, and long-term operational efficiency across diverse building types.

Certification and Professional Outcomes

Participants who complete this Building Automation Training receive a Certificate of Completion issued by The Electricity Forum and earn 1.2 CEU credits (12 professional development hours). This course supports professional development for engineers, technicians, facility managers, and energy professionals working with intelligent building systems.

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

• Understand and evaluate BAS architecture used in modern facilities
• Interpret and apply BAS communication protocols such as BACnet and Modbus
• Participate in BAS design, integration, commissioning, and upgrade projects

• Identify opportunities for energy optimization, demand control, and operational cost reduction
• Communicate effectively with designers, integrators, and automation vendors
• Support data collection strategies for analytics, fault detection, and AI-enabled applications

Course Focus Areas

The focus of this course includes:

• Building automation system architecture and system hierarchy
• Economics and lifecycle considerations of BAS investments
• BAS integration across HVAC, lighting, security, and life-safety systems
• Communication protocols and interoperability
• Emerging technologies, including IoT, analytics, FDD, 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 broad, working understanding of intelligent building automation systems.

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 (HMI) 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 rating systems and performance frameworks

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