Foundation Series - 2.3 CEUs*
The Foundation Series consists of nine core subject areas required to succeed in industry operations and maintenance from a technical perspective: Overview of Industrial Facility Systems, Safety, Mathematics, Tools, Maintenance, Environment, Computers, Print Reading, and Science.

Industrial Facility Systems - 0.1 CEUs
Overview of Industrial Facility Systems
• Introduction to Industrial Systems
• Common Industrial Facility Support Systems
• Introduction to Industrial Standards
• Common Industrial Units of Measure

Safety - 0.3 CEUs
Industrial Facility Safety
• Common Hazards Encountered in Industrial Facility Hazards
• Dangers Associated with Electrical Current and Voltage
• Common Industrial Systems Installed for Personnel and Equipment

Fire Safety
• Fire Tetrahedron
• Common Classes of Fire
• Fire Prevention Techniques
• Extinguishing Fires

Hazardous Communications
• Importance of Hazardous Communication
• Hazardous Communication Requirements
• Hazardous Communication Programs

Lockout/Tagout
• Purpose of a Lockout/Tagout Program
• Principles of a Lockout/Tagout Program
• Lockout/Tagout Devices
• Authorized Employee Responsibilities

Electrical Safety
• Electrical Shock and Arc Flash
• Emergency Response Actions
• Electrical Safeguarding
• Electrical Personal Protective Equipment
• De-Energizing Electrical Equipment

Industrial Signage
• Common Industrial Signs
• Hazard Identification Color Code
• Industrial Floor Marking Code

Personal Protective Equipment
• Personal Responsibilities
• Industrial Personal Protective Equipment
• Care, Use, and Inspection of PPE
• Effects of Using Defective PPE

Benzene Awareness
• Benzene Awareness Training Overview

First Aid I
• First Aid Kits
• Evaluating Injured or Ill Persons
• Controlling External Bleeding
• Minor Burn Treatment
• Head, Neck, and Spinal Injury Care

First Aid II
• Poisoning
• Treatment of Choking
• Performing CPR
• AED Operation
• Stroke Symptoms

*CEUs are calculated and awarded at the subject area level. Series level totals are to show the available amount of CEUs that can be earned for completing all subject areas in a particular series.
Hydrogen Sulfide
• Hydrogen Sulfide Awareness Overview

Mathematics - 0.8 CEUs
Whole Numbers
• Number Sets
• Addition
• Subtraction
• Multiplication
• Division

Fractions
• Fractions
• Common Denominators
• Reducing Fractions to Lowest Terms
• Addition and Subtraction
• Multiplication and Division

Decimals and Percentages
• Decimals
• Decimal and Fraction Conversion
• Percentages and Decimal Equivalents
• Addition and Subtraction
• Multiplication and Division

Exponents and Scientific Notation
• Exponents
• Radicals
• Scientific Notation
• Addition and Subtraction
• Multiplication and Division

Fundamentals of Geometry I
• Geometry Uses
• Angles and Measurements
• Plane Geometry Terms
• Calculating Perimeters
• Calculating Areas

Fundamentals of Geometry II
• Parts of a Circle
• Circumference and Area of Circles
• Surface Area and Volume of Three-Dimensional Shapes

Fundamentals of Trigonometry
• Uses of Trigonometry
• Pythagorean Theorem
• Trigonometric Functions
• Trigonometric Identities

Scientific Calculator Use
• Basic Operations
• Percentages and Square Roots
• Scientific Notation
• Trigonometric Functionality

Fundamentals of Statistics I
• Tables and Graphs
• Mean, Median, and Mode
• Normal Distribution Curves

Fundamentals of Statistics II
• Standard Deviation
• Distribution Curve Analysis
• Rules of Probability
• Industrial Applications

Introduction to Calculus
• Industrial Uses of Calculus
• Derivatives
• Integrals
Environment - 0.1 CEUs

Environmental Awareness
• Environmental Awareness
• Environmental, Health, and Safety Regulations
• Priority Pollutants
• Minimizing Pollution

Hazardous Materials
• Common Hazardous Materials
• Handling and Disposal Procedures
• Safety Precautions and Regulations

Computers - 0.1 CEUs

Computer Use Basics
• Basic Computer Components
• File Management and Naming Conventions
• Basic Networking Concepts
• Basic Commands

Computers in Industry
• Computer Systems
• Equipment Control and Monitoring Computers
• Portable Peripheral Devices

Print Reading - 0.1 CEUs

Print Reading Basics
• Common Industrial Prints
• Blueprints and Schematics
• Legend Use
• Title Blocks and Revisions
• Block Diagrams

Piping and Instrumentation Diagrams
• Piping and Instrumentation Diagrams
• Title Blocks, Revision Blocks, Notes, and Legends
• Piping and Instrumentation
• System Flow Paths

Tools - 0.2 CEUs

Hand Tools I
• Hand Tool Safety
• Hammers, Punches, and Prying Tools
• Screwdrivers and Wrenches

Hand Tools II
• Cutting Tools
• Gripping and Holding Tools
• Measuring Tools

Power Tools
• Power Tool Safety
• Stationary Power Tools
• Portable Power Tools

Maintenance - 0.2 CEUs

Preventive Maintenance
• Introduction to Preventive Maintenance
• Advantages
• Preventive Maintenance Programs
• Computer Maintenance Management Systems

Predictive Maintenance
• Predictive Maintenance Programs
• Tools and Techniques
• Benefits of Predictive Maintenance

Basic Troubleshooting
• Troubleshooting
• Troubleshooting Resources
• Normal System Operations and Normal Operation Parameters
• Common Method of Troubleshooting
• Troubleshooting Flowchart
Science - 0.4 CEUs

Introduction to Chemistry
- Fundamental Concepts
- Compounds, Mixtures, and Solutions
- Chemical Properties
- Methods of Chemical Analysis

Water Chemistry
- Water Properties
- Types, Sources, and Effects of Water Impurities
- Sampling Methods
- Monitored Parameters
- Water Treatment Principles

Applied Physics I: Work, Energy, and Power
- Work, Energy, and Power
- Basic Types of Energy
- Potential vs. Kinetic Energy
- Levers and Inclined Planes
- Operation of Simple Machines

Applied Physics II: Laws of Motion
- English and Metric Units
- Conversion Tables
- Force, Mass, Velocity, and Acceleration
- Laws of Motion

Applied Physics III: Heat Transfer
- Heat vs. Temperature
- Temperature Scales
- Specific Heat
- Modes of Heat Transfer

Applied Physics IV: Fluid Mechanics
- Introduction to Fluids
- Pascal’s Law
- Pressure, Force, and Area
- Fluid Flow and Pipe Area

Applied Physics V: Ideal Gas Law
- Introduction to Gases
- Ideal Gas Law
- Calculating Pressure Change

Applied Physics VI: Thermodynamics
- Zeroth Law
- First Law
- Second Law
- Third Law
- Industrial Applications