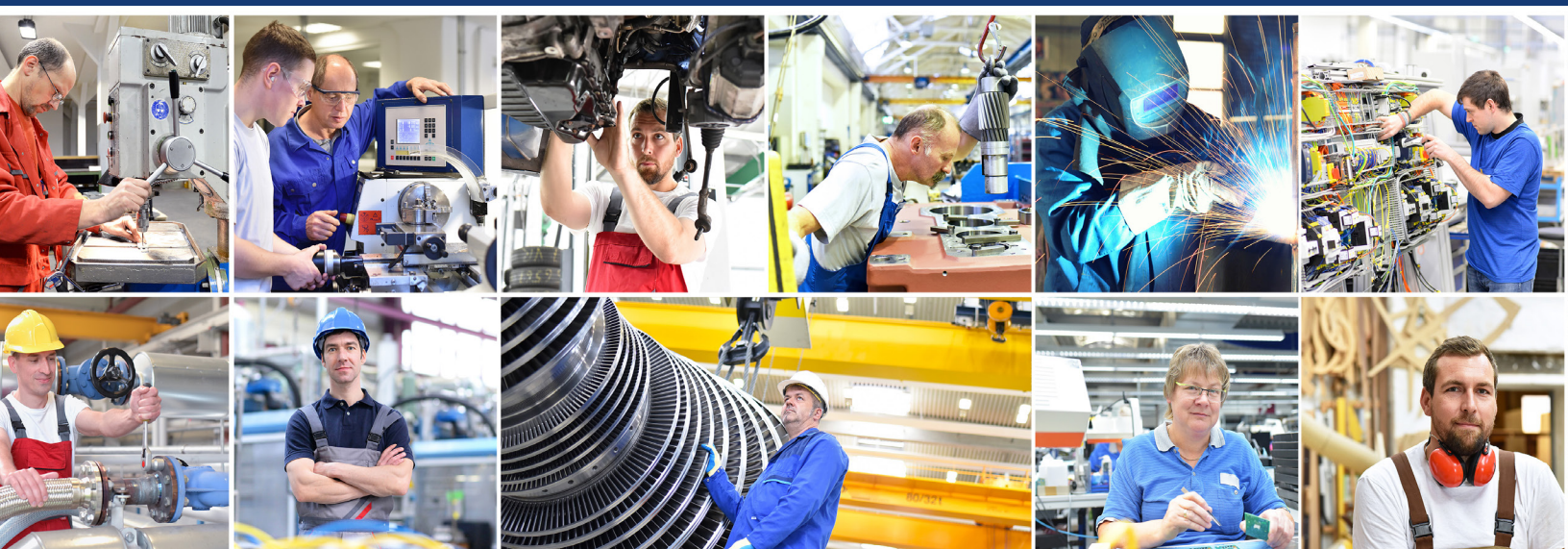
WORKFORGE

CAREER PATHWAYS

Effective skills development enables your employees to increase their knowledge and help them understand and improve how they do their jobs. With configurable training content, you can create a learning program specific to your unique needs.



ABOUT WORKFORGE

WorkForge is a comprehensive eLearning solution designed to elevate employee knowledge, retention, and professional development through engaging and interactive digital content. What sets us apart is our unique "one-stop shop" approach, encompassing off-the-shelf learning content, customizable options, a robust Learning Management System (LMS), and consulting services – all seamlessly integrated under a single vendor.

Imagine a learning experience that fits into your workforce effortlessly – accessible via computer or smart device, day or night, year-round. WorkForge's educational content adheres to the highest standards, presented in three primary learning formats: written, spoken, and visual. To ensure inclusivity, our materials are translated into over 30 languages, facilitating an accelerated learning process.

Yet, our methodology extends beyond mere compliance; it's about instilling competency within your workforce. Competency is the linchpin for critical thinking, fostering a more fulfilling work environment and enhancing overall performance for employees, their peers, and the employer. At WorkForge, we redefine learning, transforming it into a strategic tool for professional advancement and organizational success.

CONFIGURABLE TRAINING OPTIONS TO MEET YOUR NEEDS.

// INDIVIDUAL PACKAGE

Access any single Functional or Foundational Pathway.

// PROFESSIONAL PACKAGE

Access to all Foundational Skills Pathways.

// PREMIUM PACKAGE

Choose three options from both Foundational and Functional Skills Pathways.

// UNLIMITED PACKAGE

Full access to all Foundational and Functional Skills Pathways.

Packages are per plant/site. LMS Platform, Custom Content and Tech Enablement are priced separately.

FOUNDATIONAL SKILLS

Transferable traits and abilities not specific to a single job or industry. These skills are consistently valuable and remain relevant despite changes in technology or market demands.

PROFESSIONAL SKILLS

Career Building

- Manufacturing - A Future Worth Exploring
- Manufacturing - Components of Production

Microsoft Office

- Getting Started with Excel
- Entering Text and Values
- Formatting Data
- Formulas and Functions
- Working with Dates and Times
- Working with Data Tables
- Displaying Data in Charts
- Printing a Worksheet
- Managing Worksheets
- Managing Workbooks
- Securing Worksheets and Workbooks
- Using VLOOKUP and HLOOKUP
- Using XLOOKUP
- Using PivotTables
- Getting Started with Outlook
- Sending Email
- Receiving Email
- Changing the Screen Layout
- Using the Outlook Calendar
- Creating and Managing Contacts
- Using the Task List
- Printing from Outlook
- Getting Started with Word
- Creating a Document
- Font Formatting
- Paragraph Formatting
- Checking the Spelling and Grammar
- Indenting Text
- Applying Styles and Themes
- Working with Tables
- Working with Images
- Using Document Layout Options
- Using Find and Replace
- Managing Documents
- Getting Started with PowerPoint
- Working with Slides
- Adding Text to Slides
- Adding Shapes to Slides
- Adding Images to Slides
- Adding Tables to Slides
- Working with PowerPoint Objects
- Presenting a Slide Show

Time Management

- Managing Your Time
- Making a List and Checking It Twice
- Planning Your Day
- Adopting Timesaving Strategies
- Getting Organized
- Ending Procrastination
- Taking Advantage of Technology

Critical Thinking

- What is Critical Thinking?
- The Critical Thinking Process
- Developing and Evaluating Arguments

Customer Service

- Focusing on Your Customers
- Providing Friendly, Courteous, and Efficient Service
- Communicating Effectively with Customers

Stress Management

- Dealing with Stress
- Coping with On-the-Job Stress

PERSONAL DEVELOPMENT

Study Skills

- Tips for Succeeding in Online Learning

Career Building

- Kicking Off Your Job Search
- Finding Jobs to Apply For
- Networking
- Completing an Employment Application
- Creating Your Resume
- Crafting a Cover Letter
- Understanding the Interview Process
- Making a Positive Impression
- Responding to Interview Questions
- Addressing Special Interview Concerns
- After the Interview
- Surviving Your First Day on the Job
- Turning a Job into a Career
- What is Personal Branding?
- Define Your Brand
- Develop Your Brand Messages
- Implement Your Brand Strategy
- Manufacturing - Credentials and Competencies
- Manufacturing - Career Planning and Resources

Customer Service

- Identifying and Meeting Customer Needs
- Building Customer Relationships
- Respecting Diversity in Your Customers
- Better Serving Customers with Disabilities
- Dealing with Difficult Customers
- Responding to Customer Complaints
- Managing Conflict with Internal Customers

Life Skills

- Identifying Your Life Goals

Personal Finances

- Compensation
- Banking
- Taxes
- Credit Cards
- Loans
- Credit Reports and Credit Scores
- Record Keeping
- Goal Setting
- Budgeting
- Retirement Planning
- Investing
- Insurance
- Estate Planning

CONTINUOUS IMPROVEMENT

Problem-Solving

- Introduction to Problem-Solving
- Developing Your Problem-Solving Skills
- Defining the Problem
- Identifying Possible Solutions
- Evaluating and Choosing a Solution
- Implementing the Solution
- Assessing the Solution
- Avoiding Common Problem-Solving Mistakes

Project Management

- What is Project Management?
- Components of Project Management
- Initiating the Project
- Planning the Project
- Executing the Project
- Monitoring and Controlling the Project
- Closing the Project

Lean Manufacturing

- Lean Principles
- The History of Lean Manufacturing
- Workplace Organization
- S1: Sort
- S2: Straighten
- S3: Shine
- S4: Standardize
- S5: Sustain

Quality Skills

- Introduction to Quality
- ISO 9000
- Standards Organizations
- Quality Organizations
- Basic Quality Roles and Responsibilities
- Quality Concepts
- The Cost of Quality
- Managing Quality
- Quality Documents
- Corrective and Preventive Action
- Introduction to SPC
- Probability and Variation
- The Control Chart
- Control Chart Analysis
- Process Capability
- Problem Solving Tools
- Problem Solving

Six Sigma

- Six Sigma and the Organization
- Design for Six Sigma
- Process Elements for Projects
- Project Management Basics
- Management and Planning Tools
- Business Results for Improvement Projects
- Project Team Dynamics and Performance
- Define Phase Tools
- Process Analysis and Documentation
- Probability and Statistics
- Collecting and Summarizing Data
- Probability Distributions
- Measurement System Analysis
- Process Capability Performance
- Exploratory Data Analysis
- Hypotheses Test Basics
- Hypotheses Tests
- Design of Experiments
- SPC
- Implement and Validate
- Control Plans

HEALTH AND SAFETY (MICROMODULES)

Introduction to OSHA

- Introduction to OSHA
- OSHA Standards

Making Work a Safer Place

- The Job Analysis Process
- OSHA Inspections
- OSHA Citations and Penalties
- Guidelines for Preventing Workplace Violence
- Spotting Substance Abuse in the Workplace

Help! What to Do in an Emergency

- Developing an Emergency Action Plan
- First Aid in the Workplace
- Controlling Exposure to Bloodborne Pathogens

Introduction to Inclusion

- Introduction to Diversity, Equity, and Inclusion
- Building a More Inclusive Company
- Personal Benefits of Diversity, Equity, and Inclusion

Personal Protective Equipment

- Hierarchy of Controls
- Introduction to PPE
- Hazard Assessment
- Types of Hazards
- Identifying and Training Appropriate PPE

Eye and Face Protection

- Introduction to Eye and Face Protection
- Common Types of Eye and Face Protection

Head Protection

- Introduction to Head Protection
- Hard Hat Maintenance

Foot and Leg Protection

- Introduction to Foot and Leg Protection
- Types of Foot and Leg PPE

Hand and Arm Protection

- Introduction to Hand and Arm Protection
- Types of PPE Gloves

Body Protection

- Body Protection

Hearing Protection

- The Need for Hearing Protection
- Choosing the Appropriate Hearing PPE

Respiratory Protection
Recognizing Respiratory Hazards

- Types of Respiratory Equipment
- Guidelines for Respiratory Protection

Hazardous Materials

- Introduction to Hazardous Materials
- Hazard Material Recognition
- Different Forms of Hazardous Materials
- Hazard Material Effects on the Body

HazCom

- Introduction to HazCom
- HazCom Labels
- HazCom Safety Data Sheets

Hazardous Waste

- Hazardous Waste

Hazardous Material Storage

- Introduction to HAZMAT Storage
- Methods for HAZMAT Storage

HEALTH AND SAFETY (MICROMODULES)

Work Area Safety

- Workplace Housekeeping
- Workplace Safety: Walkways and Exits
- Workplace Safety Ergonomics
- Smart Practices of Workplace Safety
- Proper Lifting in the Workplace

Permit-Related Safety

- Introduction to Permit-Related Safety
- Controlling Hazards of Permit Spaces
- Entry Permits for Confined Spaces
- Permit-Related Safety Training

Fall Prevention

- Introduction to Fall Prevention
- Fall Protection Systems
- Scaffold Safety
- Aerial Lift Safety

Ladder Safety

- Ladder Safety Guidelines
- Properly Setting Up a Ladder
- Different Types of Ladders

Electrical Safety

- Introduction to Electrical Safety
- How Electricity Works
- Electrical Hazards
- Electrical Safety Guidelines

Lockout/Tagout

- Introduction to Lockout/Tagout
- Lockout/Tagout Components
- Performing an Electrical Lockout/Tagout
- Performing a Pneumatic Lockout/Tagout

Fire Safety

- Fire Safety: How a Fire Starts
- Introduction to Fire Safety: Classes of Fire
- Fire Safety Guidelines
- Introduction to Fire Drills

Fire Extinguisher

- Introduction to Fire Extinguishers
- Different Types of Extinguishers
- Selecting, Using, and Testing Fire Extinguishers

Material Handling Basics

- Introduction to Material Handling Basics
- Safe Practices for Storing and Stacking Materials
- Safety and Injury Prevention in Material Handling

Powered Industrial Trucks

- Introduction to Powered Industrial Trucks
- Classes of Powered Industrial Trucks
- Operating and Handling Materials with Forklifts
- Conveyor Systems in Material Handling

Crane and Rigging Safety

- Crane Basics
- Crane Hazards and Safety Guidelines
- Rigging Basics
- Lifting a Load and Rigging Safety
- Sling Basics
- Safe Lifting Practices and Sling Safety
- Essential Guidelines for Safe Sling Usage

HEALTH AND SAFETY (MICROMODULES)

Hand Tool Safety

- Hand Tool Safety Guidelines
- Hand Tool Safety Overview
- Cutting Tool Safety Guidelines

Power Tool Safety

- Introduction to Power Tool Safety
- Electric Power Tool Safety
- Portable Power Tool Safety
- Pneumatic Tool Safety

Metal and Compressed Gas Safety

- Sheet Metal Safety
- Compressed Gas Safety

Machine Safety

- Introduction to Machine Safety
- Machine Operation Safety
- Mechanical Hazards
- Machine Safeguard Requirements

Safety Devices

- Introduction to Safety Devices
- Presence-Sensing Safety Devices
- Pullback Safety Devices
- Restraint Safety Devices
- Safety Controls
- Other Safeguarding Devices

Sexual Harassment Guidelines for Supervisors

- Preventing Sexual Harassment
- Sexual Harassment Policies
- Responding to Sexual Harassment Complaints
- Taking Final Actions on Sexual Harassment Complaints

Handling Dangerous Workplace Situations

- Workplace Violence
- Warning Signs and Triggers of Workplace Violence
- Reacting to Workplace Violence

Workplace Discrimination and Harassment

- Introduction to Anti-Harassment and Workplace Discrimination
- Types of Workplace Discrimination
- Harassing Conduct in the Workplace
- Sexual Harassment
- Hostile Work Environment
- Quid Pro Quo Harassment
- When You're a Target or Bystander
- Harassment Reports
- Creating a Respectful Workplace
- Recap and Summary
- Human Trafficking
- Bullying
- Accommodations for Disabilities
- Pregnant Workers Fairness Act
- Harassment – Your Role as a Supervisor or Manager
- Preventing Harassment as a Supervisor or Manager
- Handling Harassment Reports as a Supervisor or Manager
- The EEOC Investigation Process

INDUSTRIAL MAINTENANCE FUNDAMENTALS

GENERAL MECHANIC

Mathematics

- Introduction to Basic Math
- Arithmetic Operations
- Introduction to Fractions
- Working with Fractions
- Decimal Numbers
- Numbers and the Number Line
- Positive and Negative Numbers
- Cartesian Coordinates
- The Metric System

Geometry

- Introduction to Geometry
- Basic Building Blocks of Geometry
- Angles
- Lines
- Polygons
- Triangles
- Quadrilaterals
- Circles
- Three-dimensional Shapes
- Coordinate Geometry
- Transformation Geometry

Measurement Tools

- Introduction to Precision Instruments
- Rulers
- Calipers
- Micrometers
- Small Hole Gauges
- Dial Indicators
- Bore Gauges
- Height Gauges
- Go/NoGo Gauges
- Test Indicators
- Go/NoGo Thread Gauges
- Attribute Gauges
- Thickness and Radius Gauges
- Squares and Protractors
- Surface Roughness Comparators
- Adjustable Parallels
- Surface Plates
- Optical Comparators
- Optical Center Finders
- Grip Gauges
- Countersink Gauges
- Fastener Height Gauges
- Rivet Inspection Gauges
- Fastener Inspection Gauges
- Gap Inspection Gauges
- Weld Gauges

Hand Tools

- Files, Hand Reamers, and Lapping Tools
- Hammers, Punches, and Chisels
- Pliers and Ratchets
- Scribes, Optical Center Finders, and Drill Blocks

Power Tools

- Pistol Grip Drills
- Drilling Techniques
- Introduction to Stationary Power Tools
- Disc and Belt Sanders
- Drill Press
- Band Saw
- Arbor Press
- Bench Grinder
- Table Saw
- Operating a Table Saw

Tool-Making Skills

- Need for Tools
- The Process
- Permanent Assemblies
- Critical Features
- Final Details

Drill Bits

- Drill Bits

INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

Drill Guides and Drill Stops

- Drill Guides and Drill Stops

Countersinking Tools

- Countersinking Tools

Threads, Taps and Dies

- Threads
- Taps
- Hand Tapping
- Threading Dies

Lubricants and Cutting Fluids

- CNC Machine Lubricants
- Cutting Fluids

Cutting Tools for Machining

- Cutting Tool Materials
- Indexable Tool Holders
- Inserts
- Solid Cutting Tools

Fasteners

- Temporary Fasteners
- Rivets
- Bolts, Screws, and Washers
- Threaded Inserts
- Hi-Loks
- Lockbolts
- Nut Plates
- Blind Rivets
- Identifying Fasteners
- Fasteners and Fits
- Securing and Lockwiring Fasteners
- Torque Tools

HYDRAULICS

Introduction to Hydraulics

- Introduction to Hydraulics
- Hydraulic Theory
- Hydraulic Fluids
- Hydraulic Systems

Components of a Hydraulic System

- Hydraulic Actuators
- Classification of Hydraulic Valves
- Hydraulic Piping and Instrumentation
- Hydroelectric Symbology and Circuits

WELDER - PRODUCTION

Welding Skills

- Welding Basics
- Introduction to Welding

Welding for NDE

- Welding and Welding Discontinuities

Weld Inspection Gauges

- Weld Gauges

Metal and Materials

- Introduction to Metals
- Ferrous Metals
- Nonferrous Metals
- Heat Treatment of Metals

Welding Processes

- Weld Defects
- Arc Welding Safety
- Elements of an Arc Welding Circuit
- Shielding
- Arc Welding Parameters
- Gas Metal Arc Welding (GMAW)
- Flux Core Arc Welding (FCAW)
- Gas Tungsten Arc Welding (GTAW)
- Plasma Arc Welding (PAW)
- Shielded Metal Arc Welding (SMAW)
- Submerged Arc Welding (SAW)
- Electroslag Welding (ESW) and Electrogas Welding (EGW)

PNEUMATICS

Introduction to Pneumatics

- Introduction to Pneumatics

INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

- Pneumatic Systems
- The Properties of Gases
- Air Compression and Distribution - Part One
- Air Compression and Distribution - Part Two

Components of a Pneumatics System

- Compressed Air Treatment
- Pneumatic Actuators
- Directional Control Valves
- Vacuum Technology
- Measuring Pneumatic Variables

Pneumatic Applications

- Pneumatic Applications

ELECTRICAL

Introduction to Electricity

- Production of Electricity
- Transmission and Distribution of Electricity
- Uses of Electricity
- Atomic Structure
- Electrical Circuits
- Electrical Current
- Voltage
- Electrical Power
- Resistance
- Ohm's Law
- Watt's Law

DC Electricity

- Production of Direct Current
- Batteries
- Circuit Analysis

AC Electricity

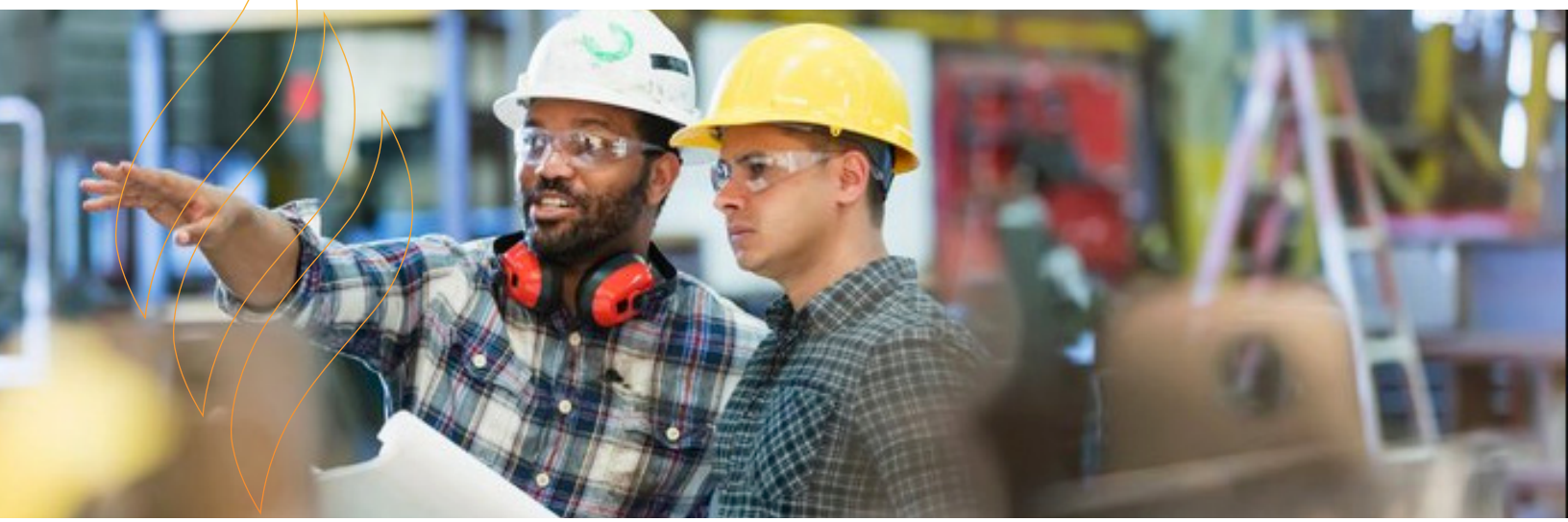
- Electromagnetism
- AC Waveform Generation
- Electromagnetic Devices
- Transformers
- Capacitors

Solid State Electricity

- Semiconductors
- Solid State Devices

Introduction to Wiring

- Wires, Connectors, and Circuit Protection
- Connecting Transformers
- DC Motors
- AC Single-Phase Motors
- Three-Phase AC Motors



INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

Electrical Connectors

- Electrical Connectors and Fasteners

Fiber Optics

- Fiber Optics and Light
- Manufacturing Optical Fiber
- Fiber Optic Cable
- Handling Fiber Optic Cable
- Quality and Safety

Sensor Technology

- Introduction to Sensors Technology
- Sensor Technology
- Proximity Sensors
- Position, Speed and Acceleration Sensors
- Industrial Process Sensors
- Advanced Sensors

Electrical Hand Tools

- Hand Tools for Electrical Wiring

Electrical Measurement Conversion

- Electrical Measurement and Unit Conversion

Electrical Resistance Test Equipment

- Resistance Test Equipment
- The Fluke® Multimeter
- The Biddle® Ohmmeter
- The Avtron® Ohmmeter
- The Hewlett Packard® Milliohmmeter
- The BCD M1® Ohmmeter

Crimping Terminals and Splices

- Terminals and Splices
- Crimping
- Crimping a Terminal
- Crimping a Pre-insulated Splice

Assembly of Coaxial Connectors

- Coaxial Cable
- Coaxial Connectors
- Coaxial Connector Tools
- Coaxial Connector Assembly

PLC

Introduction to Programmable Logic Controllers (PLC)

- Introduction to Programmable Controllers
- Introduction to Digital Electronics
- Types and Functions of Programmable Controllers

Programmable Logic Controllers (PLC)

- General Structure of PLC
- Physical Integration of the PLC
- Internal Structure of the CPU
- Basic Concepts of PLC Programming
- Common PLC Applications

ROBOTICS

Robotics

- Introduction to Robotics
- Robot Safety
- Robot Axes
- Controller and End Effectors
- Robot Programs

LEADERSHIP

Essential Communication

- Introduction to Communication
- Effective Communication
- Verbal Communication
- Written Communication
- Nonverbal Communication
- Listening Skills

Leadership

- Leadership
- Meetings
- Diversity
- Creativity
- Problem Solving
- Team Building

Team Building

- Working in a Group
- Group Communication
- Effective Collaboration
- Life Stages of a Team
- Decision-Making
- Teamwork
- Team Development

Problem-Solving

- Conflict Management
- Team Problem-Solving
- Understanding Conflict
- Communication Skills
- Managing Conflict

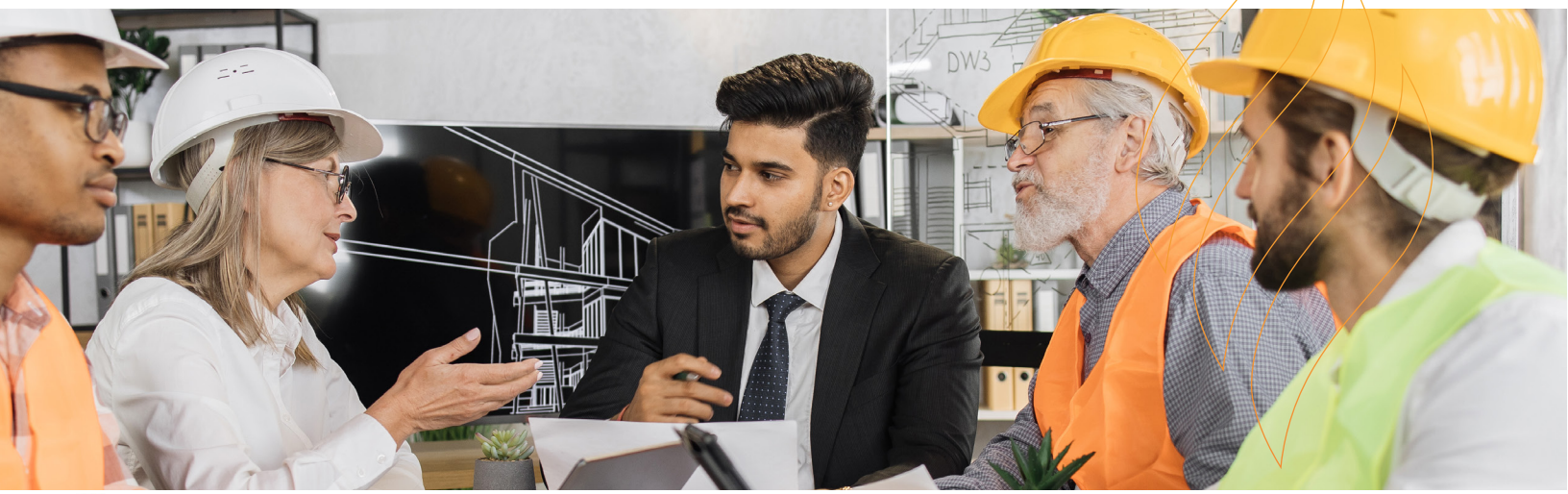
Supervisor Skills

- Handling Dangerous Workplace Situations
- Introduction to Diversity, Equity, and Inclusion
- Preventing Sexual Harassment
- Sexual Harassment Guidelines for Supervisors

LOGISTICS

Logistics

- What is Logistics?
- Logistics Technology
- Inventory
- Distribution and Transportation
- Safety, Quality, and the Environment in Logistics
- Winning in Logistics
- Careers in Logistics



FUNCTIONAL SKILLS

Specific competencies and technical knowledge required to perform specific tasks or jobs, e.g., machine operation or electrical work.

FOOD SAFETY (MICROMODULES)

Food Safety Standards

- Food Safety: What's at Stake
- Introduction to Food Safety
- What Every Employee Needs to Know
- Meeting Food Safety Standards

Food Safety Culture

- Introduction to Food Safety Culture
- Critical Components of a Food Safety Culture
- Characteristics of a Quality Food Safety Culture

BRCGS

- Introduction to British Retail Consortium Global Standard (BRCGS)
- BRCGS Fundamental Requirements for Upper Management
- BRCGS Fundamental Requirements for the Production and Quality Team
- BRCGS Fundamental Requirements for the Procurement and Warehouse Team
- BRCGS Fundamental Requirements for the Maintenance and Sanitation Team
- BRCGS Audit Readiness
- BRCGS Audit Outcomes

SQF 9 Food Safety Code

- SQF 9 Food Safety Code Audit Readiness
- SQF 9 Food Safety Code Module 2 Overview
- SQF Food Safety Code Module 11 Overview

Food Contamination Prevention

- Introduction to Food Contamination
- Types of Food Contaminants
- Food Contamination Prevention
- Employee Precautions for Contamination

Food Allergen Awareness

- Food Allergens
- Labeling
- Cross-Contact
- Cross-Contact Prevention

Good Manufacturing Practices

- Good Manufacturing Practices
- GMP Personnel Requirements
- GMP Maintenance and Infrastructure Requirements
- GMP Production and Process Controls Requirements

HACCP

- Introduction to HACCP
- HACCP Plan Fundamentals
- HACCP Plan Prerequisites and Implementation
- HACCP Validation and Verification
- Development of HACCP Validation and Verification Plans

Corrective and Preventive Action

- Corrective and Preventive Action

Approved Suppliers

- Introduction to Approved Suppliers
- Approved Supplier Risk Assessment
- Types of Supplier Risks
- Supplier Risk Assessment Matrix
- Approved Supplier Management

Traceability

- Introduction to Traceability

FOOD SAFETY (MICROMODULES), CONT.

- Traceability Processes and Structures
- Foundations of a Traceability System
- Food Traceability List and 2026 Food Traceability Rule

Food Facility Defense

- Introduction to Food Facility Defense
- Types of Food Defense Threats
- Federal Regulations for Food Facility Defense
- Roles in Food Facility Defense
- Best Practices for Food Facility Defense

Food Fraud

- Food Fraud
- Types of Food Fraud
- Food Fraud Prevention and Requirements

Environmental Monitoring

- Environmental Monitoring
- EMP Components: Analyzing and Assessing Risks
- EMP Components: Sampling and Test Methods
- EMP Components: Results and Preventative Measures

Personal Protective Equipment

- Introduction to Personal Protective Equipment
- Types of Personal Protective Equipment

Bloodborne Pathogens

- Bloodborne Pathogens
- Exposure to Bloodborne Pathogens
- Precautionary Measures for Bloodborne Pathogens
- Protocols for Bloodborne Pathogen Exposure

Safety Data Sheets

- Introduction to Safety Data Sheets
- SDS Sections 1-3: Identification Information
- SDS Sections 4-6: Emergency Response Information
- SDS Sections 7-8: Workplace Safety Information
- SDS Sections 9-11: Hazard Related Information
- SDS Sections 12-16: Additional Information

Globally Harmonized System (GHS)

- Introduction to Globally Harmonized System (GHS)
- GHS Hazard Groups
- Informational Elements of GHS Labels
- Warning Elements of GHS Labels
- GHS Pictograms for Health Hazards
- GHS Pictograms for Physical Hazards

WELDING PRODUCTION

Welding Skills

- Welding Basics
- Introduction to Welding

Welding for NDE

- Welding and Welding Discontinuities

Weld Inspection Gauges

- Weld Gauges

Metals and Materials

- Introduction to Metals
- Ferrous Metals
- Nonferrous Metals
- Heat Treatment of Metals

Blueprint Reading Fundamentals

- Introduction to Blueprints
- Engineering Drawing Terminology
- Engineering Drawing Views
- Engineering Drawing Lines

Advanced Blueprint Reading

- Geometric Dimensions and Tolerances
- Assemblies and Fits
- Threads and Fasteners

Welding Processes

- Weld Defects
- Arc Welding Safety
- Elements of an Arc Welding Circuit
- Shielding
- Arc Welding Parameters
- Gas Metal Arc Welding (GMAW)
- Flux Core Arc Welding (FCAW)
- Gas Tungsten Arc Welding (GTAW)
- Plasma Arc Welding (PAW)
- Shielded Metal Arc Welding (SMAW)
- Submerged Arc Welding (SAW)
- Electroslag Welding (ESW) and Electrogas Welding (EGW)

Wire Installation Drawings

- Engineering Drawing Review

Geometric Dimensioning and Tolerancing

- Introduction to GD&T
- GD&T Terms and Symbols
- Rules of GD&T
- Geometric Tolerances
- Datums
- Form Tolerances
- Profile Tolerances
- Orientation Tolerances
- Runout Tolerances
- Location Tolerances

PNEUMATICS

Blueprint Reading Fundamentals

- Introduction to Blueprints
- Engineering Drawing Terminology
- Engineering Drawing Views
- Engineering Drawing Lines
- Blueprint Dimensions and Tolerances

Advanced Blueprint Reading

- Geometric Dimensions and Tolerances
- Assemblies and Fits
- Threads and Fasteners

Composite Engineering Drawings and Instructions

- Engineering Communication
- Composite Engineering Drawings
- Work Instructions

Geometric Dimensioning and Tolerancing

- Introduction to GD&T
- GD&T Terms and Symbols
- Rules of GD&T
- Geometric Tolerances
- Datums
- Form Tolerances
- Profile Tolerances
- Orientation Tolerances
- Runout Tolerances
- Location Tolerances

Fasteners

- Temporary Fasteners
- Rivets
- Bolts, Screws, and Washers
- Threaded Inserts
- Hi-Loks
- Lockbolts
- Nut Plates
- Blind Rivets
- Identifying Fasteners
- Fasteners and Fits
- Securing and Lockwiring Fasteners
- Torque Tools

Introduction to Pneumatics

- Introduction to Pneumatics
- Pneumatic Systems
- The Properties of Gases
- Air Compression and Distribution - Part One
- Air Compression and Distribution - Part Two

Components of a Pneumatics System

- Compressed Air Treatment
- Pneumatic Actuators
- Directional Control Valves
- Vacuum Technology
- Measuring Pneumatic Variables

Pneumatic Applications

- Pneumatic Applications

HYDRAULICS

Blueprint Reading Fundamentals

- Introduction to Blueprints
- Engineering Drawing Terminology
- Engineering Drawing Views
- Engineering Drawing Lines
- Blueprint Dimensions and Tolerances

Advanced Blueprint Reading

- Geometric Dimensions and Tolerances
- Assemblies and Fits
- Threads and Fasteners

Composite Engineering Drawings and Instructions

- Engineering Communication
- Composite Engineering Drawings
- Work Instructions

Geometric Dimensioning and Tolerancing

- Introduction to GD&T
- GD&T Terms and Symbols
- Rules of GD&T
- Geometric Tolerances
- Datums
- Form Tolerances
- Profile Tolerances
- Orientation Tolerances
- Runout Tolerances
- Location Tolerances

Fasteners

- Temporary Fasteners
- Rivets
- Bolts, Screws, and Washers
- Threaded Inserts
- Hi-Loks
- Lockbolts
- Nut Plates
- Blind Rivets
- Identifying Fasteners
- Fasteners and Fits
- Securing and Lockwiring Fasteners
- Torque Tools

Introduction to Hydraulics

- Introduction to Hydraulics
- Hydraulic Theory
- Hydraulic Fluids
- Hydraulic Systems

Components of a Hydraulics System

- Hydraulic Actuators
- Classification of Hydraulic Valves
- Hydraulic Piping and Instrumentation
- Hydroelectric Symbology and Circuits

Introduction to Metal Forming

- Introduction to Metalworking Processes
- Introduction to Bulk Metal Forming
- Introduction to Rolling
- Introduction to Forging
- Introduction to Extruding
- Introduction to Bar and Wire Drawing
- Introduction to Sheet Metal Forming

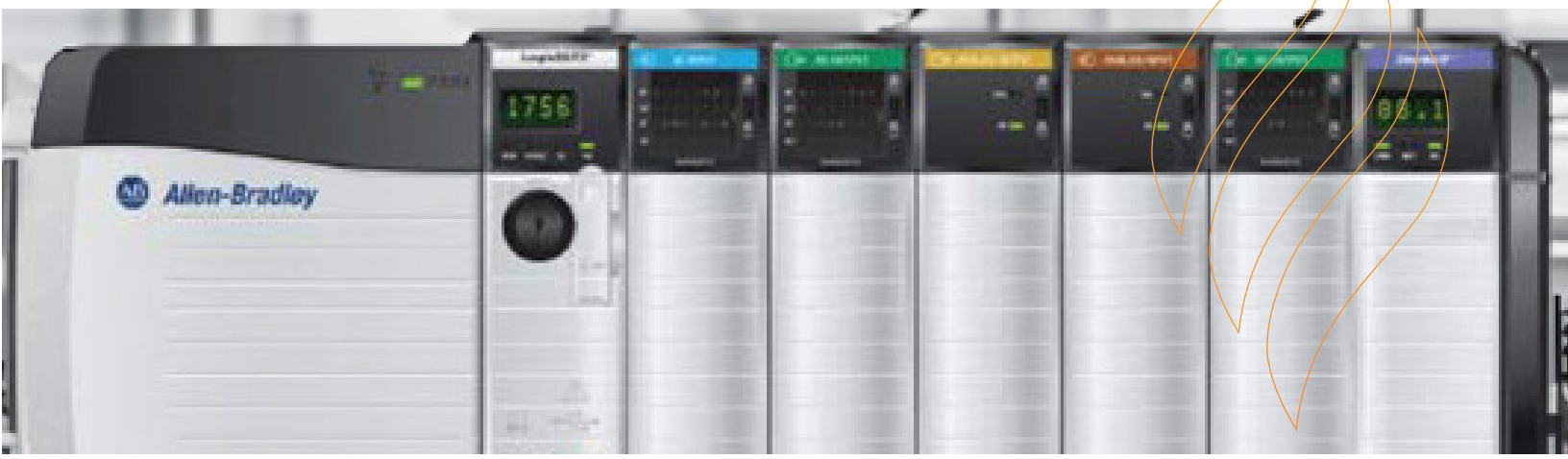
PROGRAMMABLE LOGIC CONTROLLERS

Basic

- Introduction to Programmable Controllers
- Introduction to Digital Electronics
- Type of Functions of Programmable Controllers
- General Structure of PLC
- Physical Integration of the PLC
- Internal Structure of the CPU
- Common PLC Applications

Advanced

- Introduction to the ControlLogix–General Structure, Number Systems, and Basics of Boolean Logic
- ControlLogix Hardware Composition, I/O Structure and Architecture - Introduction to Tags
- Navigating the Studio 5000 Software and Creating, Opening and Understanding Projects
- Connecting to the Controller–Establishing RSLinx Connection to the Network
- ControlLogix Project Organization and Frequently Used Tag Structures
- Troubleshooting Ladder DiagramLogic in the ControlLogix System
- Creating and Editing Tags and Code–Documenting Troubleshooting Changes
- Troubleshooting Using the Studio 5000 Software–Using I/O Forcing and Toggling Functions
- Troubleshooting ControlLogix Hardware–Discrete and Analog I/O
- Troubleshooting Remote I/O, Controller and Power Supply–Using the Trend and Compare Tools to Troubleshoot



ELECTRICAL

Introduction to Electricity

- Production of Electricity
- Transmission and Distribution of Electricity
- Uses of Electricity
- Atomic Structure
- Electrical Circuits
- Electrical Current
- Voltage
- Electrical Power
- Resistance
- Ohm's Law
- Watt's Law

DC Electricity

- Direct Current
- Batteries
- Circuit Analysis

AC Electricity

- Electromagnetism
- AC Waveform Generation
- Electromagnetic Devices
- Transformers
- Capacitors

Solid State Electricity

- Semiconductors
- Solid State Devices

Introduction to Wiring

- Wires, Connectors, and Circuit Protection
- Connecting Transformers
- DC Motors
- AC Single-Phase Motors
- Three-Phase AC Motors

Electrical Connectors

- Electrical Connectors and Fasteners

Fiber Optics

- Fiber Optics and Light
- Manufacturing Optical Fiber
- Fiber Optic Cable
- Handling Fiber Optic Cable
- Quality and Safety

Sensor Technology

- Introduction to Sensors Technology
- Sensor Technology
- Proximity Sensors
- Position, Speed and Acceleration Sensors
- Industrial Process Sensors
- Advanced Sensors

Electrical Hand Tools

- Hand Tools for Electrical Wiring

Electrical Measurement Conversion

- Electrical Measurement and Unit Conversion

Electrical Resistance Test Equipment

- Resistance Test Equipment
- The Fluke® Multimeter
- The Biddle® Ohmmeter
- The Avtron® Ohmmeter
- The Hewlett Packard® Milliohmmeter
- The BCD M1® Ohmmeter

Crimping Terminals and Splices

- Terminals and Splices
- Crimping
- Crimping a Terminal
- Crimping a Pre-insulated Splice

Assembly of Coaxial Connectors

- Coaxial Cable
- Coaxial Connectors
- Coaxial Connector Tools
- Coaxial Connector Assembly

Fasteners

- Temporary Fasteners
- Rivets

ELECTRICAL, CONT.

- Bolts, Screws, and Washers
- Threaded Inserts
- Hi-Loks
- Lockbolts
- Nut Plates
- Blind Rivets
- Identifying Fasteners
- Fasteners and Fits
- Securing and Lockwiring Fasteners
- Torque Tools

ROBOTICS

Engineering Drawings

- Introduction to Blueprints
- Blueprint Terminology
- Blueprint Views
- Blueprint Lines
- Blueprint Dimensions and Tolerances
- Blueprint Symbols
- Assemblies and Fits
- Threads and Fasteners
- Runout Tolerances

Fasteners

- Temporary Fasteners
- Rivets
- Bolts, Screws, and Washers
- Identifying Fasteners
- Fasteners and Fits
- Torque Tools

Introduction to Hydraulics

- Introduction to Hydraulics
- Hydraulic Theory
- Hydraulic Fluids
- Hydraulic Systems
- Hydraulic Piping and Instrumentation
- Hydroelectric Symbology and Circuits

Introduction to Industrial Controls

- Introduction to Industrial Controls
- Interpreting Schematics
- Indicators
- Pushbuttons
- Selector Switches
- Automatic Control Switches
- Sensors
- Control Relays
- Control Relay Types
- Control Relay Functions
- Timing Relays
- Contactors
- Overcurrent Protection Devices
- Motor Starters
- Soft Starters
- AC Variable Speed Drives
- DC Variable Speed Drives
- Troubleshooting Control Circuits

Robotics

- Introduction to Robotics
- Robot Safety
- Robot Axes
- Robot Manipulator
- Controller and End Effectors
- Robot Programs
- Hydraulic Actuators
- Classification of Hydraulic Valves
- Industrial Robot Applications

Metals

- Introduction to Metals
- Ferrous Metals
- Nonferrous Metals
- Heat Treatment of Metals

ROBOTICS, CONT.

Measurement

- Introduction to Precision Instruments
- Rules
- Calipers
- Micrometers
- Vacuum Technology
- Measuring Pneumatic Variables
- Dial Indicators

Introduction to Pneumatics

- Introduction to Pneumatics
- Pneumatic Systems
- The Properties of Gases
- Air Compression and Distribution - Part One
- Air Compression and Distribution - Part Two
- Compressed Air Treatment
- Pneumatic Actuators
- Directional Control Valves
- Pneumatic Applications

Tool Making

- Need for Tools
- The Process
- Permanent Assemblies
- Critical Features
- Final Details

Introduction to Programmable Logic Controllers (PLC)

- Introduction to Programmable Controllers
- Introduction to Digital Electronics
- Type of Functions of Programmable Controllers
- General Structure of PLC
- Physical Integration of the PLC
- Internal Structure of the CPU
- Common PLC Applications

Introduction to Industrial Automation

- Introduction to Automation
- Automated Process
- Automated System
- Introduction to Process Controls

Nondestructive Examination

- What is NDE?
- NDE Methods
- Careers in NDE
- Introduction to Visual Testing
- Light and the Human Eye
- Standard Inspection Techniques
- Visual Testing Equipment
- Manufacturing Produced Discontinuities
- Visual Testing of Welds
- Process Control Systems
- Set Point/Comparator
- Controller (PID Control)
- Multivariate Processes

Engineering Drawings

- Engineering Drawing Terminology
- Engineering Drawing Views
- Engineering Drawing Lines
- Dimensions and Tolerances
- Orientation Tolerances
- Location Tolerances

CNC MACHINIST

CNC MACHINIST ONBOARDING

Workplace Safety

- Work Area Safety
- Material Handling Basics
- Hand Tool Safety
- Mechanical Hazards
- Machine Guards
- Safety Devices
- Lockout/Tagout
- Emergency Action Plan
- Hazardous Materials
- HazCom

Personal Protective Equipment

- Eye and Face Protection
- Head Protection
- Foot and Leg Protection
- Hand and Arm Protection
- Body Protection
- Hearing Protection
- Respiratory Protection

Fractions, Decimals, and Coordinates

- Arithmetic Operations
- Introduction to Fractions
- Working with Fractions
- Decimal Numbers
- Cartesian Coordinates

Quality Tooling

- Introduction to Precision Instruments
- Rules
- Calipers
- Micrometers
- Small Hole Gauges
- Dial Indicators
- Bore Gauges
- Height Gauges
- Go/NoGo Gauges
- Go/NoGo Thread Gauges
- Gap Inspection Gauges
- Countersink Gauges
- Fastener Height Gauges
- Rivet Inspection Gauges
- Fastener Inspection Gauges
- Thickness and Radius Gauges
- Squares and Protractors
- Test Indicators
- Surface Roughness Comparators
- Adjustable Parallels
- Optical Center Finders
- Surface Plates
- Optical Comparators
- Attribute Gauges
- Grip Gauges

Basics of CNC Machining

- Introduction to Machining
- Machine Tools
- Machining Personnel
- Loads, Stresses, and Discontinuities
- Introduction to Milling and Drilling
- Introduction to Turning and Boring

Blueprint Reading

- Blueprint Terminology
- Blueprint Views
- Blueprint Lines
- Blueprint Dimensions and Tolerances
- Blueprint Symbols

Geometric Dimensioning and Tolerancing

- Introduction to GD&T
- GD&T Terms and Symbols
- Rules of GD&T
- Geometric Tolerances
- Datums
- Form Tolerances
- Profile Tolerances

CNC MACHINIST, CONT.

- Orientation Tolerances
- Runout Tolerances
- Location Tolerances

CNC FABRICATOR

Fabrication Processes

- Introduction to Metalworking Processes
- Introduction to Machining
- Introduction to Milling and Drilling
- Introduction to Turning and Boring
- Introduction to Grinding
- Introduction to Abrasive Waterjet Cutting
- Introduction to Laser Cutting
- Introduction to Electrical Discharge Machining
- Introduction to Bulk Metal Forming
- Introduction to Rolling
- Introduction to Forging
- Introduction to Extruding
- Introduction to Bar and Wire Drawing
- Introduction to Sheet Metal Forming
- Introduction to Metal Stamping
- Introduction to Metal Spinning
- Introduction to Roll Forming
- Introduction to Slide Forming
- Introduction to Hydroforming
- Introduction to Tube Forming
- Introduction to Metal Fabricating

CNC LATHE OPERATOR

Introduction to CNC Lathes

- Horizontal and Vertical Lathes
- Lathe Axes
- CNC Controllers
- Workholding Devices and Tooling for a CNC Lathe
- Auxiliary Systems for a CNC Lathe
- Maintenance Tasks for a CNC Lathe

Components of a CNC Lathe

- Components of a CNC Lathe
- Tailstocks
- Subspindles
- Steady Rests
- Bar Feeders and Bar Pullers
- Automated Part Loaders
- Part Catchers
- Probing Systems

Auxiliary Systems

- CNC Machine Lubricants
- Cutting Fluids
- The Chip Removal System

Deburring

- Deburring Machined Parts

Visual Testing

- The NDE Process
- Visual Testing

Intermediate Lathe Operator

- Chucks and Collet Chucks
- Turning Between Centers

Basic Machine Offsets

- Adjust a Tool Wear Offset on a CNC Lathe

Metal Cutting

- Cutting Tool Materials
- Speed and Feedrate

Lathe Tooling

- Lathe Tooling
- Indexable Tooling
- Solid Cutting Tools

Indexable Tool Holders

- Indexable Drills

CNC MACHINIST, CONT.

- Indexable Turning Tool Holders
- Boring Bars
- Inserts for CNC Lathes
- Indexable Milling Cutters

Solid Cutting Tools

- Drill Bits
- Reamers
- Taps
- End Mills

Lathe Setup

- Setting Up a CNC Lathe

CNC Programming

- CNC Programming Procedure for a CNC Lathe
- Program Structure for a CNC Lathe
- CNC Addresses for a CNC Lathe
- CNC Lathe Commands
- Organizing a CNC Program for a CNC Lathe

CNC MACHINING CENTER OPERATOR

Introduction to CNC Machining Centers

- Horizontal and Vertical Machining Centers
- Machining Center Axes
- CNC Controllers
- Workpiece and Tool Holding Devices for a CNC Machining Center
- Auxiliary Systems for a CNC Machining Center
- Maintenance Tasks for a CNC Machining Center
- Machining Center Movements

Auxiliary Systems

- CNC Machine Lubricants
- Cutting Fluids
- The Chip Removal System

Deburring

- Deburring Machined Parts

Visual Testing

- The NDE Process
- Visual Testing

Components of a CNC Machining Center

- Components of a CNC Machining Center
- CNC Machining Center Spindles
- Probing Systems
- Pallet Changers

Basic Machine Offsets

- Adjust a Tool Wear Offset on a CNC Machining Center

Metal Cutting

- Cutting Tool Materials
- Speed and Feedrate

Tooling

- Indexable Tooling
- Solid Cutting Tools

Indexable Tool Holders

- Indexable Drills
- Indexable Turning Tool Holders
- Boring Bars
- Indexable Milling Cutters

Solid Cutting Tools

- Drill Bits
- Reamers
- Taps
- End Mills

Machining Center Setup

- Setting Up a CNC Machining Center

CNC Programming

- CNC Programming Procedure for a CNC Machining Center
- Program Structure for a CNC Machining Center
- CNC Addresses for a CNC Machining Center
- CNC Machining Center Commands
- Organizing a CNC Program for a CNC Machining Center

INDUSTRIAL AUTOMATION AND PROCESS CONTROLS

Introduction to Industrial Automation

- Introduction to Automation
- Automated Process
- Automated System

Process Control

- Introduction to Process Controls
- Process Control Systems
- Set Point/Comparator
- Controller (PID Control)
- Multivariate Processes

INDUSTRIAL CONTROLS

Introduction to Industrial Controls

- Introduction to Industrial Controls
- Interpreting Schematics
- Indicators
- Pushbuttons
- Selector Switches
- Sensors
- Automatic Control Switches
- Control Relays
- Control Relay Types
- Control Relay Functions
- Timing Relays
- Contactors
- Overcurrent Protection Devices
- Motor Starters
- Soft Starters
- AC Variable Speed Drives
- DC Variable Speed Drives
- Troubleshooting Control Circuits

WORKFORGE

www.workforge.com • info@workforge.com

v: 10.24.2024