



COURSE CATALOG

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 can be translated into over 50 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.

Flexible ways to buy

- Single pathways: Add exactly what you need, when you need it.
- Pathway bundles: Curated sequences for Operator or Maintenance roles.
- With or without LMS: Use WorkForge’s LMS for turnkey delivery, or integrate content into your existing system.

Why it works

- Aligns training to roles and shifts
- Scales from single plant to enterprise
- Keeps budgets focused on outcomes, not shelfware

Want a tailored bundle for your team size, locations, and tech stack? Request a custom quote.





PROFESSIONAL SKILLS

Designed to support the training needs of front-line operators and related roles with practical learning that strengthens safety, performance, compliance, and career growth.

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 Contamination Prevention Advanced Interaction

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



FOOD SAFETY (MICROMODULES), CONT.

- Supplier Risk Assessment Matrix
- Approved Supplier Management

Traceability

- Introduction to Traceability
- Traceability Processes and Structures
- Foundations of a Traceability System
- Food Traceability List and 2028 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
- Environmental Monitoring Program Advanced Interaction

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

Biofilms

- Introduction to Biofilms
- Risks in Food Production
- Biofilm Lifecycle: Attachment to Dispersal
- Wet Biofilms and Dry Biofilms
- Biofilm Control &



FOOD SAFETY (MICROMODULES), CONT.

Listeria Prevention

- What is Listeria and Where Does It Come From
- Risks of Listeria in Food Operations
- Cleaning and Sanitations Methods to Prevent Listeria
- Responding to Listeria in Food Operations
- Cleaning in Dry Environments
- Cleaning in Wet Environments
- Clean Out of Place Advanced Interaction

Food Plant Cleaning and Sanitation*

- Clean in Place
- Clean Out of Place
- Sterilize in Place
- Sanitizing Facilities
- Sanitizing Equipment
- Chemical Usage
- Cleaning Equipment Storage

*New Content 2026

**Content Update 2026



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



HEALTH AND SAFETY (MICROMODULES)

Anhydrous Ammonia

- Introduction to Anhydrous Ammonia
- Safe Handling of Anhydrous Ammonia
- PPE for Anhydrous Ammonia
- Emergency Action Plan
- Emergency Response
- First Aid
- Anhydrous Ammonia and the OSHA Process Safety Management Standard

Responding to ICE Visits in the Workplace

- General Employee
- Supervisors & Managers

Confined Space Awareness*

- Ingredient Storage Confined Space Awareness
- Food Production Tanks and Machines Confined Space Awareness
- Boiler Confined Space Awareness

Lifting Safety*

- Safe Lifting Practices
- Team Lifting: Lifting with a Partner
- Material Movement and the Environment

Plant Crane Safety*

- Types of Plant Cranes
- Gantry Crane Operation and Hazards
- Mobile Crane Operation and Hazards
- Hoist Crane Operation and Hazards
- Hoist Crane Inspections and Preventative Maintenance

Truck and Dock Safety*

- Introduction to Dock Safety
- Securement of Truck Trailers While Loading/Unloading
- Truck Driver Compliance
- Signing In//Out on the Dock
- Jackstand Safety
- Inner Trailer Inspection
- Securing Loads in a Trailer
- Winter Weather Dock Safety
- Dock Area Safety
- Pallet and Material Inspections

Universal Waste*

- Introduction to Universal Waste
- Designated Locations

for Universal Waste

- Proper Waste Pickup and Documentation
- Recycling vs Disposal

Active Shooter Training*

- Active Shooter Training

*New Content 2026
**Content Update 2026



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





ENTERPRISE SKILLS

Designed to support the training needs of front-line operators and maintenance roles with practical learning that builds technical capability across equipment, systems, and plant operations.

FOOD PRODUCTION MAINTENANCE

Introduction to Food Production Maintenance*

- Introduction to Food Production Maintenance

Measurement Systems*

- Measurement Systems Overview and Importance
- Measurement Systems in the Food Plant
- Imperial
- Metric
- Importance of Precision in Food-Grade Equipment Calibration

Hand Tools**

- Hand Tools Overview and Importance
- Food-Safe Materials
- Sanitizable Tools
- Hammers
- Screwdrivers
- Wrenches
- Ratchets and Sockets
- Ratchets and Sockets Advanced Interaction
- Chisels
- Punches
- Files

- Pliers
- Tap and Die
- Saws
- Tape Measures
- Tape Measures Advanced Interaction
- Steel Rule
- Dial Indicators
- Dial Indicators Advanced Interaction
- Calipers
- Calipers Advanced Interaction
- Micrometers
- Micrometers Advanced Interaction

Power Tools**

- Power Tools Overview and Importance
- Importance of Tool Choice
- Electric Drills
- Power Screwdrivers
- Electric Saws
- Grinders
- Impact Wrench

Fasteners**

- Fasteners Overview and Importance
- Food-Safe Fasteners
- Screws

- Bolts
- Nuts
- Washers
- Pins
- Rivets
- Clips
- Anchors
- Identifying Unsafe Fasteners Advanced Interaction

Basic Mechanics**

- Basic Mechanics Overview and Importance
- Mass
- Weight
- Weight Advanced Interaction
- Friction
- Work
- Areas and Volumes
- Areas and Volumes Advanced Interaction
- Simple Machines
- Drive Ratios
- Impact of Vibration, Friction, and Fluid Friction on Food Machinery Performance



FOOD PRODUCTION MAINTENANCE, CONT.

Tool Control*

- Tool Control Overview
- Tool Count Out / Count In
- Tool Cleaning and Sanitation
- Food Contact vs Non-Food Contact Tools
- Acceptable Tool Placements

Bearings*

- Bearings Overview and Importance
- Plain or Sleeve Bearings
- Rolling Element Bearings
- Bearing Clearance and Fit
- Bearing Installation
- Bearing Mounting Types
- Sealed Bearings Vs Open Bearings in Food-Grade Applications

Belt Drives^

- Belt Drives Overview and Importance
- Pulleys and Sheaves
- Belt Types Overview
- Flat Belts
- V-Belts
- Timing Belts

- Ribbed Belts
- Bent Length Calculations
- Bent Length Calculations Advanced Interaction
- Belt Drive Alignment
- Belt Drive Alignment Advanced Interaction
- Belt Tensioning Procedures
- Belt Tensioning Procedures Advanced Interaction
- Idlers
- Belt Wear
- Types of Belt Failure
- Speed Rotations
- FDA-Compliant Belts
- Bucket / Ribbed Conveyor Overview
- Belt Inspection Routines

Chain Drives^

- Chain Drives Overview and Importance
- Sprockets
- Chain Types
- Chain Links
- Chain Sizing
- Cutting Chain to Length
- Cutting Chain to Length Advanced

Interaction

- Chain Drive Alignment
- Chain Tensioning
- Idlers
- Chain Wear
- Types of Chain Failure
- Speed Ratios
- Corrosion-Resistant Chains
- Wash-Down Safe Components

Gear Drives^

- Gear Drives Overview and Importance
- Gear Types Overview
- Spur
- Helical
- Miter
- Gear Drive Types
- Parallel Shaft Applications
- Right Angle Shaft Application
- Lubrication
- Lubrication Advanced Interaction
- Gear Alignment and Mesh
- Gear Wear
- Types of Gear Failure
- Speed Ratios
- Food-Safe Lubrication Requirements



FOOD PRODUCTION MAINTENANCE, CONT.

Couplings[^]

- Couplings Overview and Importance
- Rigid Couplings
- Flexible Couplings
- Universal Joints
- Coupling Installation
- Shaft Alignment
- Sanitary Coupling Design

Packing and Seals[^]

- Packaging and Seals Overview

- Stuffing Box
- Mechanical Seals
- O-Ring Packing
- Lip Packing and Seals
- FDA-Approved Sealing Materials

Pumps[^]

- Pumps Overview
- Positive Displacement Pumps
- Centrifugal Pumps
- Cavitation
- Pump Troubleshooting

- Valves Overview
- Types of Valves
- Sanitary Product Valves
- Types of Seals (Static vs Dynamic)

*New Content 2026

**Updated Content 2026

[^]New Content 2027



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



INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

Drill Bits

- Drill Bits

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 Symbolology 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)



INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

PNEUMATICS

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

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

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



INDUSTRIAL MAINTENANCE FUNDAMENTALS, CONT.

- 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



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

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- 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
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- Engineering Drawing Lines
- Blueprint Dimensions and Tolerances

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- 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 Symbolology 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



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



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

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- 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

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



ROBOTICS, CONT.

- 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



PROGRAMMABLE LOGIC CONTROLLERS

- 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

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
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- Control Relay Types
- Control Relay Functions
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- Contactors
- Overcurrent Protection Devices

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- Soft Starters
- AC Variable Speed Drives
- DC Variable Speed Drives
- Troubleshooting Control Circuits

LOGISTICS

Logistics

- What is Logistics?
- Logistics Technology
- Inventory

- Distribution and Transportation
- Safety, Quality, and the Environment in Logistics

- Winning in Logistics
- Careers in Logistics



"When training is easy to access and career paths are clear, employees don't just stay - they thrive."

WENDY BUSHELL
CHIEF PEOPLE OFFICER, PALERMO'S PIZZA

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