



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

## PROFESSIONAL DEVELOPMENT

### LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from The Ohio State University Business Training & Educational Services and Tooling U-SME offers a quick-start, progressive road map that allows manufacturers to build career paths for employees. This online training is intended to enhance your existing on the job training, to create a job progression plan and requires minimal preparation. It is efficient, effective training that has been developed with input from manufacturing experts.

### FLEXIBLE AND CONVENIENT

Online classes are self-paced, typically taking 60 minutes to complete. They are easily and conveniently accessible on desktops and laptops, and on tablets and phones with the Tooling U-SME app.

### CAREER PATHWAYS FOR WELDING JOB ROLES

Combine job roles for learning pathways, or offer single job roles for targeted learning. Large comprehensive programs also available.



### Online Training offers:

- Content developed by industry experts
- Accessible anytime, anywhere
- Self-paced
- Predefined curriculum for each job role
- Engaging and interactive content
- Pre- and post-training knowledge assessments
- Access to Tooling U-SME's Learning Management System (LMS)
- Guidance from our Client Success team, including advice, insights, and ideas built on best practices and years of experience

Choose a starting point based on employee's experience or company goals for a quick-start training solution.

# WELDING

## WELDING FUNDAMENTALS

Introduction to CAD and CAM for Machining	Ergonomics	Noise Reduction and Hearing Conservation	Walking and Working Surfaces	Plasma Cutting
Blueprint Reading	Fire Safety and Prevention	Personal Protective Equipment	Units of Measurement	PPE for Welding
Safety for Metal Cutting	Flammable/Combustible Liquids	Powered Industrial Truck Safety	Electrical Safety for Welding	Thermal Cutting Overview
Bloodborne Pathogens	Hand and Power Tool Safety	Respiratory Safety	Geometry Fundamentals for Welding	Welding Fumes and Gases Safety
Confined Spaces	Intro to OSHA	Safety for Lifting Devices	Math Fundamentals for Welding	Welding Safety Essentials
Environmental Safety Hazards	Lockout/Tagout Procedures	SDS and Hazard Communication	Overview of Weld Defects	Welding Symbols and Codes
	Machine Guarding		Oxyfuel Cutting Applications	

## GMAW FCAW SUB ARC

AC Fundamentals	Electrical Units	Total Productive Maintenance	Essentials of Communication	Introduction to GMAW
AC Power Sources	Introduction to Circuits	Troubleshooting	Personal Effectiveness	Introduction to Welding
Battery Selection	Introduction to Magnetism	Ferrous Metals	Advanced GMAW Applications	Introduction to Welding Processes
Conductor Selection	NEC(R) Overview	Introduction to Metals	Electrical Power for Arc Welding	Material Tests for Welding
DC Circuit Components	Parallel Circuit Calculations	Nonferrous Metals	GMAW Applications	Overview of Weld Types
DC Power Sources	Safety for Electrical Work	Safety for Mechanical Work	GMAW Applications	Welding Ferrous Metals
Electrical Instruments	Series Circuit Calculations	Approaches to Maintenance	Introduction to FCAW	Welding Nonferrous Metals
Electrical Print Reading				

## GTAW

AC Fundamentals	Electrical Units	Total Productive Maintenance	Introduction to Physical Properties	Introduction to GTAW
AC Power Sources	Introduction to Circuits	Troubleshooting	Nonferrous Metals	Introduction to Welding
Battery Selection	Introduction to Magnetism	Classification of Steel	Safety for Mechanical Work	Introduction to Welding Processes
Conductor Selection	NEC(R) Overview	Exotic Alloys	Approaches to Maintenance	Material Tests for Welding
DC Circuit Components	Parallel Circuit Calculations	Ferrous Metals	Essentials of Communication	Overview of Weld Types
DC Power Sources	Safety for Electrical Work	Introduction to Mechanical Properties	Personal Effectiveness	Welding Ferrous Metals
Electrical Instruments	Series Circuit Calculations	Introduction to Metals	GTAW Applications	Welding Nonferrous Metals
Electrical Print Reading				

## SMAW

AC Fundamentals	Electrical Print Reading	Series Circuit Calculations	Nonferrous Metals	Introduction to Welding
AC Power Sources	Electrical Units	Total Productive Maintenance	Safety for Mechanical Work	Introduction to Welding Processes
Battery Selection	Introduction to Circuits	Troubleshooting	Approaches to Maintenance	Material Tests for Welding
Conductor Selection	Introduction to Magnetism	Ferrous Metals	Essentials of Communication	Overview of Weld Types
DC Circuit Components	NEC(R) Overview	Introduction to Mechanical Properties	Personal Effectiveness	SMAW Applications
DC Power Sources	Parallel Circuit Calculations	Introduction to Metals	Electrical Power for Arc Welding	Welding Ferrous Metals
Electrical Instruments	Safety for Electrical Work	Introduction to Physical Properties	Introduction to SMAW	Welding Nonferrous Metals

## FABRICATION AND REPAIR

Introduction to Assembly	Applied and Engineering Sciences	Statistics	Conflict Resolution Principles	Introduction to Workholding
Safety for Assembly	Geometry: Circles and Polygons	Trigonometry: Sine Bar Applications	Essentials of Leadership	Locating Devices
Classification of Steel	Geometry: Lines and Angles	Trigonometry: Sine, Cosine, Tangent	Team Leadership	Supporting and Locating Principles
Essentials of Heat Treatment of Steel	Geometry: Triangles	Trigonometry: The Pythagorean Theorem	Fabrication Process	
Band Saw Operation	Math Fundamentals	Conflict Resolution for Different Groups	Fixture Body Construction	
Algebra Fundamentals	Math: Fractions and Decimals		Fixture Design Basics	

— New content is always being added. Check with your representative for the most current list of classes. —